



INVESTIGATION OF MERCURY SOURCES IN THE PRSA/PRRI AREA

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Volume II

Section III: (cont'd)

Evidentiary materials for the following Direct Discharger PRPs:

- Celanese Chemical Co.
- Cellomer Corporation
- Congoleum Corporation
- Crucible Steel/Charles Guyon Complex
- D & J Trucking
- Diamond Head Oil Refining Company
- Dresser Industries, Inc.
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- Essex County Resource Recovery Facility,
(American Ref-Fuel)
- Fairmount Chemical
- Federated Metals
- Franklin-Burlington Plastics
- Frederick Gumm Chemical Co./Canning-Gumm
- Garden State Paper
- Givaudan-Roure Corp.
- Goody Products/H. Goodman & Sons
- Hartz Mountain Corp.

Volume III

Section III: (cont'd)

Evidentiary materials for the following Direct Discharger PRPs:

- **Hercules Chemical Co.**
- **International Metallurgical Svcs./Commercial Solvents**
- **Interstate Metals Corp.**
- **Kearny Smelting & Refining Corp.**
- **Kearny, Town of, (M.U.A)**
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- **Kleer Kast, Div. of PMC**
- **Maas & Waldstein Co.**
- **Marcal Paper Mills, Inc.**
- **Monsanto**
- **Montrose Chemical Co./Chris-Craft/Chemical Waste
Mgmt.**
- **MSLA 1D Landfill**
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- **PATH (Harrison Car Maintenance)**
- **Pitt-Consol Chemical Co.**
- **PPG Industries**
- **PSE&G Essex Generating Station**
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- **PSE&G Hudson Generating Station**
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Volume IV

Section III: (cont'd)

Evidentiary materials for the following Direct Discharger PRPs:

- Passaic Valley Sewerage Commissioners, (PVSC)
- Quantum Chemical Corp.
- Seton Company Inc./Seton Leather
- Sherwin Williams Company
- Spectraserv, Inc.
- Standard Chlorine
- Sun Chemical Corp./Sequa Corp
- Tenneco Oil Co.
- Thomasett Colors Div. Hilton Davis
- Tiffany & Co.
- Town of Secaucus Treatment Plant

Volume V:

Section IV: (cont'd)

Evidentiary materials for the following Direct Discharger PRPs:

- Troy Chemical Corp.
- Universal Oil Products
- U.S. Industrial Chemicals
- U.S. Postal Service
- Ventron/Velsicol
- Walter Kidde & Co. Inc.
- Western Electric (AT&T/Lucent Technologies)
- Witco Corp. – Humco Chemical Division



INVESTIGATION OF MERCURY SOURCES IN THE PRSA/PRRI AREA

INTRODUCTION AND INSTRUCTIONS

This report, Investigation of Mercury Sources In The PRSA/PRRI Area, is organized to present specific evidence compiled on certain Potentially Responsible Parties (“PRPs”) and their association with sources of mercury in the Passaic River Restoration Initiative (“PRRI”) Area. The PRRI Area includes the Passaic River Study Area (“PRSA”).

Report Organization

The contents of this report are organized into a set of five, (5), binders which serve to provide the following information:

- An overall Investigation of Mercury Sources “Direct Discharger” evidence summary chart;
- An overall Investigation of Mercury Sources “Combined Sewer Outflow” (CSO) evidence summary chart;
- A figure which provides the locations of the mercury-associated Direct Discharger PRPs identified to-date in the PRRI and PRSA areas;
- A figure which provides the locations of the mercury-associated CSO PRPs identified to-date in the PRRI and PRSA areas;
- Analytical chemistry data obtained during sediment sampling and investigation activities conducted throughout the PRRI and PRSA areas;
- PRP-specific evidentiary materials for the Direct Discharger Group only

The evidence summary charts, PRP locations figures, and partial PRP-specific evidentiary materials are all located in Volume 1 of this report.

The remaining PRP-specific evidentiary materials have been organized for review in Volume 2 through Volume 5, inclusive, of this report.

Sources Of Information

It should be noted that the evidentiary materials have been compiled from various publicly available information sources. These open sources include, but are not limited to:

- The United States Environmental Protection Agency (“USEPA”);

- The New Jersey Department of Environmental Protection (“NJDEP”);
- Historical records of the Passaic Valley Sewerage Commissioners (“PVSC”);
- Records obtained from online public and proprietary database information services

Summary

The evidence summary charts, associated figures, and mercury association evidence are all arranged in alphabetical and/or numerical order for purposes of simplicity.

It is the objective of this report that the reader reviews the evidence summary chart, the mercury association information provided on the figures, and analytical data. The reader should then refer to the tabbed sections to review the detailed evidence compiled and presented for each PRP of interest.

This report serves to provide an interim compilation of those PRPs identified to-date, which are known to be associated with the formation of mercury in the PRRI and PRSA areas. Ongoing efforts may serve to identify additional PRPs that are associated with mercury formation.

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TIERRA SOLUTIONS, INC.

KNOWN DIRECT DISCHARGERS
WITH MERCURY ASSOCIATIONS
IN THE PRRI/PRSA

BBL[®]
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

FIGURE

1

Investigation of Mercury Sources in the PRSA/PRRI Area

Direct Dischargers

Reference Source Codes:					
B(M) = BRS record for copper, lead or mercury P(M) = PCS record for mercury N(M) = NJPDES record for mercury 104E = PRP response under CERCLA 104(e) CERCLIS = CERCLA Information System Database		H(M) = Killam Heavy Metals for mercury SSR = NJDEP Site Remediation Site Status Report EXEC = PRP Executive Summary charts NPL = Site on EPA National Priorities List RF = PRP Regulatory File		ERNS = Emergency Response Notification Reports NJPDES = NJ Pollutant Discharge Elimination Permit TRS = Toxic Release Reporting System	
Facility Name	Street Address	City	ZIP Code	Known Discharge Mechanism	Source Reference
1 A & L Dyers	36 Seabury Street	Newark	07104	Floor drains connected to sanitary sewer leading to CSO.	104E, H (M)
2 Albert Steel Drum/Prentiss	338 Wilson Avenue	Newark	07105	Discharge to Pierson's Creek	RF, 1984-5 SSR
3 Alcan Aluminum	Jacobus Avenue	Kearny	07032	Discharge to Passaic River	RF
4 Alfred Heller Heat Treating Co.	5 Wellington Street	Clifton	07011	NJPDES No. NJ0027430. NJPDES No. NJ0132012. NJPDES Minor Discharger. Passaic River. CSO. Two 6" discharge lines to sewer.	NJPDES, H(M)
5 Alliance Chemical Inc./Pfisterer	33 Avenue P	Newark	07105	Discharge to Plum Creek	H(M), 104E, RF
6 Alpha Metals	680 Schulyer Avenue., Building 9	Kearny	07032	Storm drains discharged to Passaic River	RF
7 Arkansas Co. Inc. (Hummel Co.)	185 Foundry Street	Newark	07105	Via storm sewer	H(M), RF
8 Ashland Chemical Co. Div. of Ashland Oil Inc.	400 Doremus Avenue	Newark	07105	Via storm sewer	RF
8A Ashland Chemical Co. Div. of Ashland Oil Inc.	221 Foundry Street	Newark	07105	Via storm sewer	H(M), RF
9 Atlas Refinery Inc.	142 Lockwood Street	Newark	07105	Catch basins on Blanchard Street ; Lockwood Street storm sewer; on-site drainage ditch. NJPDES No. NJ0116904	H(M), 104E, NJPDES
10 Avenue P Landfill	357-405 Avenue P	Newark	07105	On-site discharges.	RF
11 BASF	50 Central Avenue	Kearny	07032	Stormwater and process water discharges to Passaic River; spills, leaks and migration of waste formerly stored on ground surface; flooding.	B (M), 104E, RF
12 Bayonne Barrell & Drum Co.	150-154 Raymond Blvd.	Newark	07105	Storm sewer discharge to Harrison Creek.	H(M), RF
13 Bayone, City of (MUA)	630 Avenue C	Bayonne	07002	NJPDES NO. NJ0109240	RF, NJPDES
14 Benjamin Moore & Company	134 Lister Avenue	Newark	07105	Discharge via sanitary & storm sewer system lines; 14" discharge pipe to Passaic River.	H(M), 104E, RF
15 B-Line Trucking	67 Esther Street	Newark	07105	Via sanitary & storm sewer; unpermitted 4 " discharge pipe, NJPDES No. NJ0135798	RF, NJPDES
16 Celanese Chemical Co.	354 Doremus Street	Newark	07101	Process wastes entered ditch which flowed to Plum Creek; on-site spills and on-site landfills.	H (M), 104E, RF
17 Cellomer Corporation.	46 Albert Avenue	Newark	07105	Leaks from drum storage area; spills to catch basin and then to Passaic River; spills to storm sewer.	RF
18 Congoleum Corporation	160 Passaic Avenue	Kearny	07032	Washwaters flowed to facility drains and then discharged to Passaic River; spills and runoff to river.	104E
19 Crucible Steel/Charles Guyon Complex	1000 S. Fourth Street	Harrison	07029	Emissions of materials into the Passaic River via the storm water drainage system; spreading of oil onto the ground; on-site discharges into a pit near a surface drain.	RF
20 D & J Trucking	310-336 Avenue P	Newark	07105	On-site dumping of wastes to ground. Discharges to ditch leading to Plum Creek.	RF
20A Diamond Head Oil Refining Company	1401 Harrison Turnpike	Kearny	07032	On-site disposal of materials related to oil reprocessing operations; impact to ground water discharging to Frank's Creek.	RF
21 Dresser Industries, Inc.	401 Worthington Avenue	Harrison	07029	NJPDES No. NJ0036048. Discharges of process wastewaters to the PVSC system.	RF, NJPDES, 104E
22 Engelhard Industries, Inc.	429 Delancey Street	East Newark	07114	Discharge to Pierson's Creek. Onsite drainage ditch and sump discharge to creek. NJPDES No. NJ0001171	RF, H(M), NJPDES
23 Engelhard Industries, Inc. (Hanovia Liquid Gold)	1 West Central Avenue	Newark	07029	An 18" storm sewer discharges to river in front of Englehard facility	H (M), NJPDES, RF, BM
24 Essex County Resource Recovery Facility (American Ref-Fuel)	183 Raymond Blvd.	Newark	07105	NJPDES No. 0055247; discharges to stormwater sewer system; stormwater runoff; dewatering pond discharges to Central Ditch to Passaic River.	RF, NJPDES
25 Fairmount Chemical Co.	117 Blanchard Street	Newark	07101	Discharges to Passaic River Via Blanchard Street storm sewer, NJPDES no. NJ0033430 NJPDES No. NJ0116777	H(M)
26 Federated Metals	150 St. Charles Street	Newark	07105	NJPDES No. NJ0099058. Contaminants were discharged to the sanitary sewer system.	NJPDES, B(M), H(M)
27 Franklin-Burlington Plastics	113 Passaic Avenue	Kearny	07032	Sump pit discharges to river; storm drain discharges to river, leaking drum storage area, NJPDES No. NJ0130508	RF, NJPDES
28 Frederick Gumm Chemical Co./Canning-Gumm	538 Forest Street	Kearny	07032	Surface water run-off to storm sewer system.	RF, B(M)
29 Garden State Paper	950 River Drive	Garfield	07026	NJPDES No. NJ0000370. NJPDES Minor Discharger. Passaic River. NJPDES Pno. NJ0110051. NJPDES Minor Discharger. Passaic River. CSO. Storm Sewer.	H (M); NJPDES, RF

Investigation of Mercury Sources in the PRSA/PRRI Area

Direct Dischargers

Reference Source Codes:					
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Facility Name	Street Address	City	ZIP Code	Known Discharge Mechanism	Source Reference
30 Givaudan-Roure Corp.	125 Delawanna Avenue	Clifton	07014	NJPDES No. NJ0088374. NJPDES No. NJ0099414. NJPDES No. NJ0125261. NJPDES Minor Discharger. Facility "chemical sewer" installed in 1947, was reportedly plumbed to the "River Road storm sewer" and to the river. CSO discharge- the sanitary sewer system has a wet weather bypass at the third river. 1978- no information on discharge mechanism reported by PVSC.	RF, H (M), B (M), NJPDES
31 Goody Products, Inc./H. Goodman & Sons	969 Newark Turnpike	Kearny	07029	Discharges to Dead Horse Creek, a tributary to the Passaic River. NJPDES No. NJ0120251	104E, NJPDES
32 Hartz Mountain Corp.	700 Frank E. Rodgers Blvd.	Harrison	07029	Discharges found in effluent samples, soil and groundwater.	RF
33 Hercules Chemical Company	111 South Street	Passaic	07055	NJPDES No. NJ0126896 NJPDES No. NJ0033600. The stormwater collection system discharges to Passaic River.	RF, NJPDES
34 International Metallurgical Svcs./Commercial Solvents	190 Blanchard Street	Newark	07105	On-site ground discharges via decaying drums containing various materials. Sloppy housekeeping - abandoned facility.	RF
35 Interstate Metals Corp.	275 Dukes Street	Kearny	07032	NJPDES No. NJ0072117. Process wastewaters discharged to on-site lagoons which flowed into Dead Horse Creek/Frank's Creek and then to Passaic River.	RF, 1992 SSR, NJPDES
36 Kearny Smelting & Refining	936 Harrison Avenue	Kearny	07032	NJPDES No. NJ0120073. Process discharges went to on-site retention pond which flowed to Frank's Creek, a tributary to Passaic River. Surface runoff, spills and leaks entered stormwater system.	RF, NJPDES
37 Kearny, Town of (MUA)	402 Kearny Avenue	Kearny	07032	NJPDES No. NJ0022161	NJPDES, RF, G5+G726
38 Keegan Landfill	Bergen Avenue	Kearny	07032	Landfilling activities occurred at the site in the 1960's until 1972. Leachate from the site enters the Kearny waterways/wetlands and ultimately enter into Newark Bay.	RF
39 Kleer Kast, Div. of PMC	450 Schuyler Avenue	Kearny	07032	NJPDES No. NJ0031313. Contaminants were transported to Frank's Creek, a tributary to the Passaic River, via surface run-off, spills, leaks and discharges to catch basins connected to CSO.	RF, NJPDES
40 Maas & Waldstein Co.	2121 McCarter Highway	Newark	07104	Direct discharge of wash waters and cooling waters to Passaic River. NJPDES No. NJ0035173	RF, NJPDES
41 Marcal Paper Mills Inc.	1 Market Street	Elmwood Park	07407	NJPDES No. NJ0002674. One 36" sewer line discharges to Passaic River. An on-site settling lagoon treats process water.	H(M), NJPDES, RF
42 Monsanto	Foot of Pennsylvania Avenue	Kearny	07032	Process discharges to Passaic River; discharges to storm & sanitary sewers; spills and leaks; surface contaminants discharge from flooding.	104E
43 Montrose Chemical Company/Chris Craft (Chemical Waste Management)	120 Lister Avenue	Newark	07105	Process wastes/other wastes were discharged to Passaic River; discharges, spills and leaks on to ground surface; flooding; discharges via storm sewers.	RF
44 NJ Transit (Meadows Maintenance Complex)	1148 Newark Turnpike	Kearny	07032	NJPDES No. NJ0031992. Materials were spilled/dumped to ground; discharges to underdrain system to ditch which flowed to Passaic River; floor drains and stormwater runoff ran into ditch.	P(M), B(M), NJPDES, RF
45 Otis Elevator Co.	1000 1st Street	Harrison	07029	Waterwastes dumped onto ground; discharges to drainage ditch which flows to Plum Creek.	H(M), 104E
46 PATH Harrison Car Maintenance	Foot of Cape May Street	Harrison	07029	Floor drains connected to PVSC sewers; storm water and surface runoff routed through drainage system which led to Passaic river.	B(M), RF
47 Pitt-Consol Chemical Company	191 Doremus Avenue	Newark	07105	NJPDES No. NJ0060704. Discharges via storm and sanitary sewers; spills & leaks; surface water contamination due to flooding.	H(M), 104E, NJPDES
48 PPG Industries	29 Riverside Avenue	Newark	07104	Intentional dumping of materials into Passaic River by employees; explosion leaked contaminants to ground; process wastes ran to floor drains which ran into river.	104E
49 PSE&G Essex	155 Raymond Blvd.	Newark	07105	Discharges of materials to river and directly to ground; surface water runoff via storm sewer.	RF, 104E
50 PSE&G Harrison	Frank E. Rodgers Boulevard South	Harrison	07029	NJPDES No. NJ0000566. Discharges and bypasses from wastewater treatment plant led to Passaic River; dumping of materials onto ground by employees; spills/leaks on-site; surface water runoff to Passaic River.	NJPDES, RF, 104E
51 PSE&G Hudson Generating Station	Duffield and Van Keuren Avenues	Jersey City	07306	Overflow from onsite retention area discharges directly to the river. Storm drains to river. High tides ebb and flow into facility basement. River water is pumped onsite, used to settle ash and discharged back to river. Floor drains discharge to the Hackensack River Via an oil water separator.	RF, B(M), N(M), TRS

Investigation of Mercury Sources in the PRSA/PRRI Area

Direct Dischargers

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	Facility Name	Street Address	City	ZIP Code	Known Discharge Mechanism	Source Reference
52	PSE&G Kearny Generating Station	Foot of Hackensack Avenue	Kearny	07032	Direct discharge outlets to meadows and Hackensack River. Floor drains discharge to the meadows drainage area Via an oil-water separator. River water is pumped and used to wash and settle ash from onsite combustion operations. NJPDES No. NJ0000655.	B(M), N(M), RF, NJPDES
53	PVSC (Passaic Valley Sewerage Commissioners)	600 Wilson Avenue	Newark	07105	NJPDES No. NJ0021016, NJPDES No. NJ0108707, NJPDES No. NJ0118427	PCS, NJPDES
54	Quantum Chemical Corp.	300 Doremus Avenue	Newark	07102	Floor drains discharge to storm sewer and then to Passaic River; flooding causes surface runoff to flow to catch basins and river. Note: there is a NJPDES permit issued for this address to "Equistar" - NJPDES No. NJ0116513.	RF, NJPDES
55	Seton Company Inc./Seton Leather	849 Broadway/345 Oraton Street	Newark	07104	Discharge Via CSO (Verona Avenue) to Passaic River.	H(M), RF
56	Sherwin Williams Company	60 Lister Avenue	Newark	07105	NJPDES No. NJ0116157	H(M), 104E, NJPDES, RF
57	Spectraserv, Inc.	75 Jacobus Avenue	Kearny	07032	On-site oil/water separator collects and treats stormwater surface flows. A 6" outflow pipe from this separator discharges to the Passaic River. Soil contamination visible near sludge tanks and tank farms; surface discharges to ground water.	RF
58	Standard Chlorine	1035 Belleville Turnpike	Kearny	07032	NJPDES No. NJ0001856. Storm water runoff to drainage ditch which leads to Dead Horse Creek and ultimately to Passaic River.	NJPDES, RF
59	Sun Chemical Corporation/Sequa Corp.	185 Foundry Street	Newark	07105	Process waste discharge to floor drains which connect to sewer system and onward to Roanoke Avenue CSO and eventually the Passaic River. Contaminants found in soil and groundwater.	H(M), 104E, RF
60	Tenneco Oil Co.	One and Five Harrison Avenue	Harrison	07029	NJPDES No. NJ0031348. An oil/water separator discharges treated water to the Passaic River.	NJPDES, G27
61	Thomasett Colors Div. Hilton Davis	120 Lister Avenue	Newark	07105	NJPDES No. NJ0106941. Floor washings discharged to the Passaic River; process discharges sent to storm and sanitary sewers which outfall to the Passaic River; spills & leaks to groundwater, soil and air; flooding caused contact with contaminated on-site soils.	H(M), 104E, NJPDES
62	Tiffany & Company	820 Highland Avenue	Newark	07105	Two outside drains on the property empty into the Newark City sewer system; intentional dumping of chemicals on to ground in back of plant.	RF
63	Town of Secaucus Treatment Plant	1100 Koelle Boulevard	Secaucus	07094	NJPDES No. NJ0025038	N(M), NJPDES
64	Troy Chemical Corp.	1 Avenue L	Newark	07105	Discharge to Pierson's Creek. NJPDES No. NJ0031453, NJPDES No. NJ0134287, NJPDES No. NJ0088315	B(M), H(M), RF, NJPDES
65	Universal Oil Products	Route 17 & Paterson Plank Rd.	E. Rutherford	07073	NJPDES No. NJ0076244. Hackensack River. Discharged wastes to unlined wastewater lagoons. On-site surface water stream-channel (Ackerman's Creek)	NJPDES, RF
66	U.S. Industrial Chemicals	300 Doremus Avenue	Newark	07102	Contaminants found in subsurface runoff storm drain which discharged to Passaic River.	RF
67	US Postal Service	850 Newark Turnpike	Kearny	07908	NJPDES No. NJ0027758, NJPDES No. NJ0100714, NJPDES No. NJ0108367, NJPDES No. NJ0121541	B(M), NJPDES
68	Ventron/Velsicol	Ethyl Boulevard	Wood Ridge	07075	On-site contaminated soil, groundwater, and surface water media discharged to Berry's Creek.	1984-5 SSR, RF
69	Walter Kidde & Co. Inc.	675 Main Street	Belleville	07109	Discharge Via facility storm sewer to Passaic River. CSO. Two 6" discharge lines to sewer.	RF, H(M), 104E
70	Western Electric (AT&T; Lucent Technologies)	100 Central Avenue	Kearny	07032	Contaminants detected in catch basins at former drum storage pad. Catch basins discharged to Passaic River.	104E
71	Witco Corp. - Humko Chemical Div.	652 Doremus Avenue	Newark	07105	NJPDES No. NJ0002241, NJPDES No. NJ0116149. Discharges to PVSC.	B(M), 104E, NJPDES, RF

CSO Cases

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TIERRA SOLUTIONS, INC.

**KNOWN CSO DISCHARGERS WITH
MERCURY ASSOCIATIONS IN THE
PRRI/PRSA**

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

FIGURE

2

LEGEND - FIGURE 2

KNOWN CSO PRP DISCHARGERS WITH MERCURY ASSOCIATION IN THE PRRI/PRSA			
1	Adco Chemical	114	Mara Polishing & Plating Corp.
2	Aircraft Engineering Products	115	Marcal Paper Mills, Inc.
3	All Plating & Casting Inc.	116	Marvel Photo Co., Inc.
4	American Cyanamid	117	McGraw Edison
5	American Polymers Inc.	118	Mechanics Uniform Rental
6	Andarn Electro Service	119	Mercury Printing Ink Corp.
7	Anheuser Busch Inc.	120	Metal Parts Processing Company
8	Anodizing Corp.	121	MI Holdings, Inc.
9	Applikay Textile Processing Corp.	122	Microtronics Corp.
10	Apollo Dyeing & Finishing Co.	123	Miller & Son
11	Art Metal U.S.A. Inc.	124	Minnesota Mining & Manufacturing Company
12	Artolier Lighting & Sound	125	Missbrenner Prnts, Inc.
13	Atlantic Casting & Engineering Corp.	126	Mobay Chemical Corporation
14	Atlantic Chemical Corp.	127	Modern Metal Industries, Inc.
15	Auric Fidelity Chemical	128	Modern Polishing & Plating Company
16	Automatic Plating Inc.	129	Mona Industries, Inc.
17	Automatic Plating Methods Inc.	130	Morris Paperboard Company
18	Baltic Dying & Finishing Co. Inc.	131	Morton Chemical Company
19	Barber Photographic Co.	132	Moyer Plating Company
20	Bartlo Packaging Inc.	133	NJ Galvanizing & Tinning Works, Inc.
21	BASF Corp.	134	NJ Tanning
22	Batteries for Industry	135	National Standard Company
23	Bayer Corp./Landers-Segal (dba Lansco)	136	National Starch & Chemical Company
24	Bell Atlantic NJ	137	Newark Boxboard Company
25	Bessemer Processing Co. Inc.	138	Newark International Airport
26	Best Provision Company Inc.	139	Newark Morning Ledger Company
27	Blue Line Inc.	140	Newark Tank Wash, Inc.
28	Boris Kroll Fabrics	141	Newark Wire Cloth Company
29	Butler Industries	142	NJ Institute of Technology
30	Brewster Finishing Co. Inc.	143	North Jersey Skein Dyeing Co., Inc.
31	Bright Star Industries Inc.	144	NuCraft Industries, Inc.
32	Brightboy Abrasives	145	Ocean Leather Corp.
33	C. Patti Electroplating Corp.	146	Okonite Company
34	C.S. Osborne	147	OMI International Corp. Sel Rex
35	Calumet Electroplating	148	Orbis Products Corporation
36	Caschem	149	Owens Corning Kearny Plant
37	Chem-Fleur Inc.	150	Oxy-Metal Industries Corp.
38	Chem-Fleur International	151	Pabst Brewing Company
39	Chemical Waste Management of NJ	152	Package House Inc.
40	Christopher Dyeing	153	Paragon Dyeing & Finishing Company
41	Chromadyne Corp/Carlson Inks	154	Paramount Plating Company
42	Coca-Cola Bottling Co. of New York	155	Passaic High School
43	Coltec Industries/Crucible Steel	156	Paterson Bleach & Chemical Company
44	Comet Chemical Co.	157	Paterson Canning
45	Comet Finishing Co. Inc.	158	Praff & Kendall
46	Consolidated Bases, Inc.	159	PJP Landfill
47	Consolidated Laundries	160	PNC, Inc.
48	Continental Can Co.	161	Port Authority of NY & NJ
49	Continental Piece Dyeing & Finishing	162	Power Plating, Inc.
50	Cook & Dunn Paints	163	Presto Lock Company, Inc.
51	Cookson Pigments	164	Presto Lock Company, Inc.
52	Coral Dyeing & Finishing Corp.	165	PSE&G Clifton Gas Operations
53	Craft Textile Printing Co.	166	PSE&G Hudson Generating Station
54	Crest Chemical Corporation	167	PSE&G Orange Gas Operations
55	Curtiss Wright	168	Q-Pack Corp.
56	Diamond Head Oil Refining Corporation	169	Red Star Yeast Plant
57	Donald Steel Treating	170	Reichold Chemicals, Inc.
58	Driver Harris Company	171	Remis Industries
59	E.I. DuPont	172	Rentex Corporation
60	Eagle Affiliates, Inc.	173	Riverside Coat-Apron-Towel-Linen Supply
61	Earthline Division, SCA Services, Inc.	174	Roche Diagnostics
62	Edmar Creations	175	Roma Printing & Finishing Corp.
63	EGL Co., Inc.	176	Ronson Metals Corp.
64	Elan Chemical Company	177	Route 17 Plating, Inc.
65	Etamco Industries	178	Royle Plating Company
66	Express Container Corp.	179	S.B. Penick & Company
67	Exxon Chemicals America	180	S.B. Penick Company

LEGEND - FIGURE 2

68	Exxon CO. USA Bayonne Lubricating Plant	181	Safety-Kleen Corp.
69	Federated Metals Corp.	182	Schering Corporation
70	Federated Pacific Electric Company	183	Scientific Chemical Processing, Inc.
71	Fiber Flex	184	Sealtronics, Inc.
72	Fritzche Dodge & Olcott, Inc.	185	Shelton Manufacturing Company, Inc.
73	G & H Metal Finishers, Inc.	186	Shiman Industries, Inc.
74	Gamma Dyeing & Finishing	187	Shulton Toiletries
75	General Color Co.	188	Smithkline Beecham Consumer Healthcare
76	General Electric/Newark Lamp	189	Staley Chemical Company
77	General Hospital Center	190	Standard Tank
78	Getty Terminal Corporation	191	Stanley Tools
79	Gordos Corp.	192	Stirrup Metal Products, Inc.
80	Gotham Graphics	193	Suffern Plating Corporation
81	Graphic Engraving Corp.	194	Sunbrite Dyeing Company
82	GSF Energy, Inc.	195	Superior Dyed Furs, Inc.
83	Hanovia, Inc.	196	Swepeco Tube Corp.
84	Harcros Chemicals, Inc.	197	T. & E. Industries, Inc.
85	Henkel Corporation	198	T.A. Farrell Plating Company
86	Hoffman LaRoche, Inc.	199	T. Henshall Silk Finishing Co., Inc.
87	Howmediac Inc./Orthopaed Div.	200	Technical Plastic Extruders, Inc.
88	Hy-Grade Electroplating Co.	201	Teledyne Powder Alloys
89	Imperial Electroplating Company	202	Tenneco Chemicals, Inc.
90	Independence Plating Corp.	203	Textile Piece Dyeing Company, Inc.
91	Inmont Corporation	204	The Bogert & Carlough Company
92	Interstate Dyeing & Finishing Co.	205	The Kenny Press, Inc.
93	ISP Van Dyk, Inc.	206	The Narotex Corporation
94	ITT Avionics Division	207	Trio Dyeing & Finishing Company
95	ITT Avionics Division	208	Union Photo Company
96	J. Wiss & Sons, Inc.	209	United Parcel Service
97	Jiffy Lube/Suburban Lubrications	210	Universal Flavors
98	Kaysam Corporation	211	University of Medicine and Dentistry
99	Kearny Scrap Metal Co.	212	Victory Optical Manufacturing
100	Kenny Press, Inc.	213	Videx Equipment Corporation
101	Kenrich Petrochemicals Inc.	214	Vulcan Material Co.
102	Keystone Automotive Plating	215	Wallace & Tiernan
103	Kingsland Drum & Barrel Company, Inc.	216	Warner Universal Corp.
104	Kraft Container Corp.	217	Westinghouse Electric Corporation
105	Krementz & Company	218	Westinghouse Electric Corporation
106	Laurel Lamp Mfg.	219	Weston Instrument Division
107	Leader Dyeing & Finishing Company	220	Westwood Industries, Inc.
108	Little Falls Alloys	221	Whatman, Inc.
109	Magruder Color Company, Inc.	222	White Chemical Company
110	Malan Dyeing & Finishing Company, Inc.	223	Wilbur B. Driver Company
111	Malcolm X Shabazz	224	Witco Chemical
112	Mallinckrodt, Inc.	225	Worthington Pump Corp.
113	Manco Metal Finishers	226	Zeneca, Inc. - Bayonne Site
		227	Zenith Dyeing & Finishing

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Facility Name	Street Address	City	ZIP Code	Known Discharge Mechanism	Source Reference
1 Adco Chemical	Rutherford Street	Newark	07105	CSO	H(M)
2 Aircraft Engineering Products	2 Ackerman Avenue	Clifton	07011	"	H(M)
3 All Plating & Casting Inc.	589 Ferry Street	Newark	07105	"	H(M)
4 American Cyanamid	697 Route 46	Clifton	07011	"	B(M),
5 American Polymers Inc.	50 California Avenue	Paterson	07503	"	H(M)
6 Andarn Electro Service	72 Michigan Avenue	Paterson	07503	"	H(M)
7 Anheuser Busch Inc.	200 U.S. Route 1	Newark	07101	"	H(M)
8 Anodizing Corp.	39 Avenue L	Newark	07105	"	H(M)
9 Applikay Textile Processing Corp.	35 Eight Street	Passaic	07055	"	H(M)
10 Apollo Dyeing & Finishing Co.	140 Summer Street	Paterson	07501	"	H(M)
11 Art Metal U.S.A. Inc.	300 Passaic Street	Newark	07101	"	H(M)
12 Artolier Lighting & Sound	141 Lanza Avenue	Garfield	07026	"	H(M)
13 Atlantic Casting & Engineering Corp.	80 Bloomfield Avenue	Clifton	07012	"	H(M)
14 Atlantic Chemical Corp.	10 Kingsland Road	Nutley	07110	"	H(M), B(M)
15 Auric Fidelity Chemical	470 Freylinghusen Avenue	Newark	07114	"	H(M)
16 Automatic Plating Inc.	185 Foundry Street	Newark	07105	"	H(M)
17 Automatic Plating Methods Inc.	347 Ferry Street	Newark	07105	"	H(M)
18 Baltic Dying & Finishing Co. Inc.	35 8th Street	Passaic	07055	"	H(M)
19 Barber Photographic Co.	378 Sixth Avenue	Newark	07101	"	H(M)
20 Bartlo Packaging Inc.	61 Willett Street	Passaic	07055	"	B(M)
21 BASF Corp.	1255 Broad Street	Clifton	07013	"	B(M)
22 Batteries for Industry	42 Fulton Place	Paterson	07509	"	H(M)
23 Bayer Corp./Landers-Segal (dba Lansco)	84 Dayton Avenue	Passaic	07055	"	"
24 Bell Atlantic NJ	133 Prospect Street	Passaic	07055	"	B(M)
25 Bessemer Processing Co. Inc.	135 Haynes Avenue	Newark	07114	"	B(M), H(M)
26 Best Provision Company Inc.	144 Avon Avenue	Newark	07108	"	H(M)
27 Blue Line Inc.	209 Parkhurst Street	Newark	07114	"	H(M)
28 Boris Kroll Fabrics	41 State Street	Paterson	07501	"	H(M)
29 Butler Industries	637 Central Avenue	Newark	07107	"	H(M); EXEC
30 Brewster Finishing Co. Inc.	4th Avenue & McLean Blvd.	Paterson	07522	"	H(M)
31 Bright Star Industries Inc.	600 Getty Avenue	Clifton	07011	"	B(M), H(M)
32 Brightboy Abrasives	351-356 6th Avenue	Newark	07107	"	H(M)
33 C. Patti Electroplating Corp.	302 South 12th Street	Newark	07026	"	H(M)
34 C.S. Osborne	125 Jersey Street	Harrison	07029	"	H(M), 104E
35 Calumet Electroplating	24 Calumet Street	Newark	07105	"	H(M)
36 Caschem	40 Avenue A	Bayonne	07002	"	"
37 Chem-Fleur Inc.	200 Pulaski Street	Newark	07105	"	H(M)
38 Chem-Fleur International	150 Firmenich Way	Newark	07105	"	B(M)
39 Chemical Waste Management of NJ	107 Albert Avenue	Newark	07105	"	B(M)
40 Christopher Dyeing	36 Ryle Avenue	Paterson	07502	"	H(M)
41 Chromadyne Corp/Carlson Inks	481 River Road	Clifton	07014	"	B(M)
42 Coca-Cola Bottling Co. of New York	470-496 19th Avenue	Paterson	07059	"	H(M)

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Facility Name	Street Address	City	ZIP Code	Known Discharge Mechanism	Source Reference
43 Coltec Industries/Crucible Steel	900 - 1000 Frank E. Rodgers Bvd	Harrison	07029	"	
44 Comet Chemical Co.	410 Adams Street	Newark	07114	"	H(M)
45 Comet Finishing Co. Inc.	272 Wright Street	Newark	07114	"	H(M)
46 Consolidated Bases, Inc.	120 Greaylock Avenue	Belleville	07029	"	H(M)
47 Consolidated Laundries	35 High Street	Newark	07104	"	H(M)
48 Continental Can Co.	297 Getty Avenue	Paterson	07053	"	H(M)
49 Continental Piece Dyeing & Finishing	15-19 First Avenue	Paterson	07053	"	H(M)
50 Cook & Dunn Paints	190 St. Francis Street	Newark	07101	"	H(M)
51 Cookson Pigments	256 Vanderpool Street	Newark	07114	"	B(M)
52 Coral Dyeing & Finishing Corp.	555 East 31st Street	Paterson	07513	"	H(M)
53 Craft Textile Printing Co.	44 Beech Street	Paterson	07509	"	H(M)
54 Crest Chemical Corporation	225-235 Emmet Street	Newark	07105	"	H(M)
55 Curtiss Wright	1 Rotary Drive	Woodridge	"	"	H(M)
56 Diamond Head Oil Refining Corporation	1401 Harrison Turnpike	Kearny	07032	"	
57 Donald Steel Treating	147 Thomas Street	Newark	07114	"	H(M)
58 Driver Harris Company	201 and 308 Middlesex Street	Harrison	07029	"	B(M), H(M)
59 E.I. DuPont	256 Vanderpool Street	Newark	07114	"	H(M)
60 Eagle Affiliates, Inc.	505 Manor Avenue	Harrison	07029	"	H(M)
61 Earthline Division, SCA Services, Inc.	120 Lister Avenue	Newark	07105	"	H(M)
62 Edmar Creations	35 Mohegan Street	Clifton	07013	"	H(M)
63 EGL Co., Inc.	730 and 7474 South 13th Street	Newark	07103	"	B(M)
64 Elan Chemical Company	268 Doremus Avenue	Newark	07105	"	H(M)
65 Etamco Industries	1 Montgomery Street	Belleville	07109	"	H(M)
66 Express Container Corp.	105 Avenue L	Newark	07105	"	H(M)
67 Exxon Chemicals America	East 22nd Street	Bayonne	07002	"	
68 Exxon CO. USA Bayonne Lubricating Plant	1 Avenue J	Bayonne	07002	"	
69 Federated Metals Corp.	150 St. Charles Street	Newark	07101	"	B(M), H(M)
70 Federated Pacific Electric Company	150 Avenue L & Herbert Street	Newark	07101	"	H(M)
71 Fiber Flex	574 Ferry Street	Newark	07105	"	EXEC
72 Fritzche Dodge & Olcott, Inc.	85 Third Street	Clifton	07011	"	H(M)
73 G & H Metal Finishers, Inc.	282 Dakota Street	Paterson	07503	"	H(M)
74 Gamma Dyeing & Finishing	44 Shady Street	Paterson	07513	"	H(M)
75 General Color Co.	24 Avenue B	Newark	07114	"	TRI, H(M)
76 General Electric/Newark Lamp	40 17th Street	Newark	07103	"	RF
77 General Hospital Center	350 Boulevard	Passaic	07055	"	B(M)
78 Getty Terminal Corporation	86 Doremus Avenue	Newark	07105	"	B(M)
79 Gordos Corp.	250 Glenwood Avenue	Bloomfield	07003	"	H(M)
80 Gotham Graphics	120 Park Avenue	Lyndhurst	07071	"	H(M)
81 Graphic Engraving Corp.	248 East 17th Street	Paterson	07524	"	H(M)
82 GSF Energy, Inc.	1501 Harrison Street	Kearny	07032	"	B(M)
83 Hanovia, Inc.	100 Chestnut Street	Newark	07105	"	B(M)
84 Harcros Chemicals, Inc.	600 Cortlandt Street	Belleville	07109	"	B(M)

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Facility Name	Street Address	City	ZIP Code	Known Discharge Mechanism	Source Reference
85 Henkel Corporation	First & Essex Streets	Harrison	07029	"	B(M)
86 Hoffman LaRoche, Inc.	340 Kingsland Road	Nutley	07110	"	B(M), H(M)
87 Howmediac Inc./Orthopaed Div.	359 Veterans Boulevard	Rutherford	07070	"	B(M)
88 Hy-Grade Electroplating Co.	35 Fourth Street	Newark	07107	"	H(M), 104E
89 Imperial Electroplating Company	52 Park Avenue	Lyndhurst	07071	"	H(M)
90 Independence Plating Corp.	107 Alabama Avenue	Paterson	07503	"	H(M)
91 Inmont Corporation	1255 Broad Street	Clifton	07013	"	H
92 Interstate Dyeing & Finishing Co.	35 8th Street	Passaic	07055	"	H(M), 1978 PVSC.
93 ISP Van Dyk, Inc.	11 William Street	Belleville	07109	"	B(M)
94 ITT Avionics Division	100 Kingsland Road	Clifton	07014	"	B(M)
95 ITT Avionics Division	390 Washington Avenue	Nutley	07110	"	B(M), H(M)
96 J. Wiss & Sons, Inc.	400 West Market Street	Newark	07107	"	H(M)
97 Jiffy Lube/Suburban Lubrications	491 Washington Avenue	Belleville	07109	"	
98 Kaysam Corporation	27 Kentucky Avenue	Paterson	07503	"	H(M)
99 Kearny Scrap Metal Co.	17 Stover Avenue	Kearny	07032	"	EXEC
100 Kenny Press, Inc.	100 Edison Place	Newark	07102	"	
101 Kenrich Petrochemicals Inc.	140 East 22nd Street	Bayonne	07002	"	
102 Keystone Automotive Plating	24 Legal Street	Newark	07114	"	H(M)
103 Kingsland Drum & Barrel Company, Inc.	308 Miller Street	Newark	07114	"	H(M)
104 Kraft Container Corp.	354 Thomas Street	Newark	07114	"	H(M)
105 Krementz & Company	49 Chestnut Street	Newark	07102	"	H(M)
106 Laurel Lamp Mfg.	111-135 Rome Street	Newark	07105	"	
107 Leader Dyeing & Finishing Company	94 Madison Avenue	Paterson	07509	"	H(M)
108 Little Falls Alloys	17-191 Caldwell Avenue	Paterson	07501	"	H(M)
109 Magruder Color Company, Inc.	1 Virginia Street	Newark	07114	"	H(M)
110 Malan Dyeing & Finishing Company, Inc.	61 Keen Street	Paterson	07509	"	H(M)
111 Malcolm X Shabazz	80 Johnson Avenue	Newark	07108	"	B(M)
112 Mallinckrodt, Inc.	223 West Side Avenue	Jersey City	07305	"	EXEC
113 Manco Metal Finishers	390 Park Avenue	Newark	07107	"	H(M), 104E
114 Mara Polishing & Plating Corp.	105-107 West Peddie Street	Newark	07108	"	H(M)
115 Marcal Paper Mills, Inc.	400 Hoover Avenue	Bloomfield	07003	"	H(M)
116 Marvel Photo Co., Inc.	11 South Fourth Street	Harrison	07029	"	H(M)
117 McGraw Edison	75 Belmont Avenue	Belleville	07109	"	B(M), H(M)
118 Mechanics Uniform Rental	VanDyne Street	Newark	07108	"	H(M)
119 Mercury Printing Ink Corp.	25 McLean Boulevard	Paterson	07514	"	H(M)
120 Metal Parts Processing Company	165 Delancy Street	Newark	07105	"	H(M)
121 MI Holdings, Inc.	223 West Side Avenue	Jersey City	07305	"	
122 Microtronics Corp.	156 Huron Avenue	Clifton	07013	"	H(M)
123 Miller & Son	24 Belleville Avenue	Belleville	07109	"	H(M)
124 Minnesota Mining & Manufacturing Company	500 Doremus Avenue	Newark	07105	"	H(M)
125 Missbrenner Prnts, Inc.	211 Mt. Prospect Avenue	Clifton	07102	"	H(M)
126 Mobay Chemical Corporation	169 W 52nd Street	Bayonne	07002	"	

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	Facility Name	Street Address	City	ZIP Code	Known Discharge Mechanism	Source Reference
127	Modern Metal Industries, Inc.	112 Greylock Avenue	Belleville	07109	"	H(M)
128	Modern Polishing & Plating Company	242 South 12th Street	Newark	07109	"	H(M)
129	Mona Industries, Inc.	65 East 23rd Street	Paterson	07524	"	H(M)
130	Morris Paperboard Company	177 3rd Avenue	Paterson	07509	"	H(M)
131	Morton Chemical Company	335 McLean Boulevard	Paterson	07504	"	H(M)
132	Moyer Plating Company	175 Christie Street	Newark	07101	"	H(M)
133	NJ Galvanizing & Tinning Works, Inc.	139 Haynes Avenue	Newark	07114	"	H(M)
134	NJ Tanning	410 Frelinghuysen Avenue	Newark	07114	"	H(M)
135	National Standard Company	714-716 Clifton Avenue	Newark	07103	"	B(M), H(M)
136	National Starch & Chemical Company	225 Belleville Avenue	Bloomfield	07003	"	B(M)
137	Newark Boxboard Company	17 Blanchard Street	Newark	07101	"	H(M)
138	Newark International Airport	Building 10 - Tower Road	Newark	07114	"	B(M)
139	Newark Morning Ledger Company	Star Ledger Plaza	Newark	07101	"	H(M)
140	Newark Tank Wash, Inc.	335 Raymond Boulevard	Newark	07105	"	H(M)
141	Newark Wire Cloth Company	351 Verona Avenue	Newark	07104	"	B(M), H(M)
142	NJ Institute of Technology	323 ML King Boulevard	Newark	07102	"	B(M)
143	North Jersey Skein Dyeing Co., Inc.	152 Putnam Street	Paterson	07524	"	H(M)
144	NuCraft Industries, Inc.	33 Spring Street	Paterson	07501	"	H(M)
145	Ocean Leather Corp.	42 Garden Street	Newark	07105	"	H(M)
146	Okonite Company	959 Market Street	Paterson	07513	"	H(M)
147	OMI International Corp. Sel Rex	75 River Road	Nutley	07110	"	B(M)
148	Orbis Products Corporation	55 Virginia Street	Newark	07114	"	H(M)
149	Owens Corning Kearny Plant	1249 Newark Turnpike	Kearny	07032	"	B(M)
150	Oxy-Metal Industries Corp.	75 River Road	Nutley	07110	"	H(M)
151	Pabst Brewing Company	400 Grove Street	Newark	07106	"	H(M)
152	Package House Inc.	188 Getty Avenue	Clifton	07011	"	H(M)
153	Paragon Dyeing & Finishing Company	73 Chadwick Street	Paterson	07509	"	H(M)
154	Paramount Plating Company	689 South 16th Street	Newark	07101	"	H(M)
155	Passaic High School	180 Paulison Avenue	Passaic	07055	"	B(M)
156	Paterson Bleach & Chemical Company	207 East 15th Street	Paterson	07524	"	H(M)
157	Paterson Canning	35 Getty Avenue	Paterson	07503	"	H(M)
158	Pfaff & Kendall	84 Foundry Street	Newark	07105	"	EXEC
159	PJP Landfill	400 Sip Avenue	Jersey City	07306	"	CERCLIS
160	PNC, Inc.	115 East Centre Street	Nutley	07110	"	B(M)
161	Port Authority of NY & NJ	Foot of Cape May Street	Harrison	07029	"	B(M)
162	Power Plating, Inc.	60 Garfield Avenue	Paterson	07522	"	H(M)
163	Presto Lock Company, Inc.	35 Market Street	Elmwood Park	07407	"	H(M)
164	Presto Lock Company, Inc.	100 Outwater Lane	Garfield	07026	"	H(M)
165	PSE&G Clifton Gas Operations	240 Kuller Road	Clifton	07011	"	B(M)
166	PSE&G Hudson Generating Station	Duffield & Van Keuren	Jersey City	07306	"	
167	PSE&G Orange Gas Operations	284 North Park Street	East Orange	07017	"	B(M)
168	Q-Pack Corp.	2145 McCarter Highway	Newark	07104	"	H(M)

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Facility Name	Street Address	City	ZIP Code	Known Discharge Mechanism	Source Reference
169 Red Star Yeast Plant	800 Mill Street	Belleville	07109	"	H(M)
170 Reichold Chemicals, Inc.	46 Albert Avenue	Newark		"	B(M), RF
171 Remis Industries	22 Johnson Street	Newark	07105	"	H(M)
172 Rentex Corporation	51 Schley Street	Garfield	07026	"	H(M)
173 Riverside Coat-Apron-Towel-Linen Supply	179 Lafayette Street	Paterson	07501	"	H(M)
174 Roche Diagnostics	11 Franklin Avenue	Belleville	07109	"	B(M), H(M)
175 Roma Printing & Finishing Corp.	55 First Avenue	Paterson	07514	"	H(M)
176 Ronson Metals Corp.	55 Manufacture Place	Newark	07105	"	H(M), RF
177 Route 17 Plating, Inc.	112 River Road	Clifton	07014	"	H(M)
178 Royle Plating Company	70 Sussex Avenue	Newark	07101	"	H(M)
179 S.B. Penick & Company	158 Mount Olive Avenue	Newark	07114	"	H
180 S.B. Penick Company	540 New York Avenue	Lyndhurst	07071	"	H(M), 1971, 1972, 1974, 1976, & 1978 PVSC.
181 Safety-Kleen Corp.	32 Tompkins Point Road	Newark	07114	"	B(M)
182 Schering Corporation	60-104 Orange Street	Bloomfield	07003	"	B(M), H(M)
183 Scientific Chemical Processing, Inc.	411 Wilson Street	Newark	07105	"	H(M)
184 Sealtronics, Inc.	320 Colfax Avenue	Clifton	07103	"	H(M)
185 Shelton Manufacturing Company, Inc.	591 Ferry Street	Newark	07105	"	H(M)
186 Shiman Industries, Inc.	109 Monroe Street	Newark	07105	"	H(M)
187 Shulton Toiletries,	697 Route 46	Clifton	07104	"	B(M)
188 Smithkline Beecham Consumer Healthcare	65 Industrial South	Clifton	07011	"	B(M)
189 Staley Chemical Company	100 Third Avenue	Kearny	07032	"	RF
190 Standard Tank	1 Ingham Avenue	Bayonne	07002	"	
191 Stanley Tools	140 Chapel Street	Newark	07105	"	
192 Stirrup Metal Products, Inc.	215 Emmet Street	Newark	07114	"	H(M)
193 Suffern Plating Corporation	210 Garibaldi Avenue	Lodi	07644	"	H(M)
194 Sunbrite Dyeing Company	35 8th Street	Passaic	07055	"	H(M)
195 Superior Dyed Furs, Inc.	100 Dayton Avenue	Passaic	07055	"	H(M)
196 Swepeco Tube Corp.	1 Clifton Boulevard	Clifton	07012	"	B(M), H(M)
197 T. & E. Industries, Inc.	422 Alden Court	Orange	07050	"	H(M)
198 T.A. Farrell Plating Company	39 Atlantic Street	Garfield	07026	"	H(M)
199 T. Henshall Silk Finishing Co., Inc.	48 Beech Street	Paterson	07501	"	H(M)
200 Technical Plastic Extruders, Inc.	574 Ferry Street	Newark	07105	"	
201 Teledyne Powder Alloys	350 Allwood Road	Clifton	07013	"	B(M)
202 Tenneco Chemicals, Inc.	290 River Drive	Garfield	07026	"	H(M)
203 Textile Piece Dyeing Company, Inc.	451 Fifth Avenue	Paterson	07059	"	H(M)
204 The Bogert & Carlough Company	508 Straight Street	Paterson	07059	"	H(M)
205 The Kenny Press, Inc.	110 Edison Place	Newark	07102	"	H(M)
206 The Narotex Corporation	245 4th Street	Passaic	07055	"	H(M)
207 Trio Dyeing & Finishing Company	440 East 22nd Street	Paterson	07514	"	H(M)
208 Union Photo Company	1240 Main Street	Clifton	07014	"	H(M)
209 United Parcel Service	493 County Avenue	Seacaucus	07094	"	B(M)
210 Universal Flavors	265 Harrison Avenue	Kearny	07032	"	B(M)

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211 University of Medicine and Dentistry	100 Bergen Street	Newark	07101	"	B(M)
212 Victory Optical Manufacturing	9 Mulberry Place	Newark	07102	"	H(M)
213 Videx Equipment Corporation	170 Railroad Avenue	Paterson	07501	"	H(M)
214 Vulcan Material Co.	600 Doremus Avenue	Newark	07105	"	ACOE maps and Sanborn Fire Insurance Maps. RF
215 Wallace & Tiernan	25 Main Street	Belleville	07109	"	B(M), H(M)
216 Warner Universal Corp.	100 Third Avenue	Kearny	07032	"	EXEC
217 Westinghouse Electric Corporation	1 Westinghouse Plaza	Bloomfield	07003	"	B(M), H(M)
218 Westinghouse Electric Corporation	90 Orange Street	Newark	07101	"	H(M)
219 Weston Instrument Division	614 Frelinghuysen Avenue	Newark	07114	"	H(M)
220 Westwood Industries, Inc.	117 Genesee Avenue	Paterson	07509	"	H(M)
221 Whatman, Inc.	9 Bridewell Place	Clifton	07012	"	B(M)
222 White Chemical Company	660 Frelinghuysen Avenue	Newark	07114	"	NPL, CERCLIS
223 Wilbur B. Driver Company	1875 McCarter Highway	Newark	07104	"	H(M)
224 Witco Chemical	2 Wood Street	Paterson	07509	"	1978 PVSC. H(M).
225 Worthington Pump Corp.	401 Worthington Avenue	Harrison	07029	"	H(M)
226 Zeneca, Inc. - Bayonne Site	229 East 22nd Street	Bayonne	07002	"	B(M)
227 Zenith Dyeing & Finishing	53 East 23rd Street	Paterson	07509	"	H(M)

Analytical Chemistry
Data

SOURCES OF MERCURY CONTAMINATION IN THE PRRI AND PRSA AREAS

Table 1
RESULTS BY CONCENTRATIONS (PPM)
(As of September 22, 2003)

SAMPLE LOCATION	SAMPLE ID	DEPTH (FT)	MERCURY CONC. (PPM)	PERCENTILE
17 A	17A074	12.7 - 12.33	29.6	MAX
14 A	14A010	1.5 - 1.67	28.5	5%
204	20406A	4.5 - 5.5	28.3	5%
95 A	95A019	3 - 3.17	28.1	5%
206	20602A	0.5 - 1.5	27.8	5%
22 A	22A047	7.67 - 7.83	27.1	5%
17 A	17A047	7.67 - 7.83	25.1	5%
278	27806B	3.2 - 3.9	22.6	5%
242	24205A	7.5 - 12.2	21.9	5%
PRP-99-04	SD-3	3.0 - 5.0	21.6	5%
18 A	18A062	10.17 - 10.33	20.9	5%
228	22805B	5.9 - 8	20.5	5%
203	20310A	4.5 - 5.5	20.4	5%
241	24104A	5.4 - 8.4	20.4	5%
275	27504A	3.1 - 4.4	20.2	5%
242	24204A	4.6 - 10.5	19.4	5%
226	22605A	5.3 - 6.8	19.2	5%
23 A	23A020	3.17 - 3.33	19	5%
209	20906B	4.5 - 5.5	18.9	5%
212	21207A	4.5 - 5.5	18.8	5%
16 A	16A047	7.67 - 7.83	18.7	5%
235	23506A	4.9 - 5.7	18.7	5%
214	21403A	8.4 - 10.4	18.5	5%
21 A	21A074	12.17 - 12.33	18.3	5%
228	22804B	4.4 - 7.4	18.1	5%
286	28605B	3.5 - 4.5	18	5%
59 A	59A010	1.5 - 1.67	17.8	5%
208	20802A	0.5 - 13.7	17.5	5%
224	22404A	2.5 - 3.5	17.3	5%
234	23406B	8.1 - 9.8	17.2	5%
93 A	93A024	3.83 - 4	17.1	5%
214	21404A	10.4 - 12.4	17.1	5%
231	23106A	9.1 - 11	17	5%
21 A	21A020	3.17 - 3.33	16.9	5%

SAMPLE LOCATION	SAMPLE ID	DEPTH (FT)	MERCURY CONC. (PPM)	PERCENTILE
243	24306A	4.6 - 5.7	16.8	5%
21 A	21A047	7.67 - 7.83	16.8	25%
227	22704A	2.5 - 3.5	16.7	25%
90 A	90A012	1.83 - 2	16.3	25%
203	20308A	3.5 - 4.5	16.1	25%
243	24303A	1.5 - 2.6	16.1	25%
206	20606A	4.5 - 5.5	16	25%
222	22207A	11 - 13.5	16	25%
241	24105A	6.9 - 9.2	16	25%
260	26004B	3.7 - 5.3	16	25%
235	23505A	4.1 - 5.3	15.8	25%
274	27403A	0.9 - 2.8	15.8	25%
229	22906A	4.1 - 4.9	15.7	25%
259	25902B	0.5 - 1.7	15.7	25%
270	27006A	2.6 - 3.2	15.7	25%
285	28503A	1.5 - 2.5	15.7	25%
02 A	02A010	1.5 - 1.67	15.6	25%
222	22204A	5.2 - 8.8	15.5	25%
209	20905B	3.5 - 4.5	15.3	25%
237	23702A	0.5 - 1.5	15.3	25%
292	29204C	2.5 - 3.5	14.7	25%
16 A	16A020	3.17 - 3.33	14.6	25%
224	22405A	3.5 - 4.5	14.5	25%
240	24002A	0.5 - 1.2	14.5	25%
245	24506B	7.3 - 9.4	14.5	25%
242	24206A	10.5 - 14	14.4	25%
231	23105A	7.1 - 10.1	14.3	25%
206	20605A	3.5 - 4.5	14	25%
285	28506A	4.5 - 5.4	13.9	25%
20 A	20A095	15.67 - 15.83	13.8	25%
240	24005A	2.5 - 3.2	13.8	25%
16 A	16A074	12.17 - 12.33	13.6	25%
235	23504A	3.3 - 4.9	13.6	25%
270	27004A	1.8 - 2.6	13.6	25%
222	22206A	7 - 9.9	13.4	25%
223	22305A	5.5 - 6.7	13.4	25%
242	24203A	2.6 - 4.6	13.3	25%
243	24304A	2.6 - 3.6	13.3	25%
243	24305A	3.6 - 4.6	13.3	25%
238	23803A	1.5 - 2.5	13.2	25%
273	27304A	2.4 - 3.4	13.2	25%
278	27803B	1.2 - 1.9	13.2	25%

TABLE 1 - RESULTS BY CONCENTRATIONS (PPM)
REV: 09/22/2003

SAMPLE LOCATION	SAMPLE ID	DEPTH (FT)	MERCURY CONC. (PPM)	PERCENTILE
240	24004A	1.9 - 2.5	13.1	25%
214	21402A	0.5 - 8.4	12.9	25%
224	22403A	1.5 - 2.5	12.9	25%
227	22705A	3.5 - 4.5	12.9	25%
18 A	18A010	1.5 - 1.67	12.7	25%
245	24504B	3.7 - 7.3	12.6	25%
19 A	19A020	3.17 - 3.33	12.5	25%
20 A	20A010	1.5 - 1.67	12.5	25%
226	22604A	4.3 - 6.4	12.5	25%
08 A	08A001	0 - 0.17	12.4	25%
18 A	18A020	3.17 - 3.33	12.4	25%
223	22306A	4.3 - 6.1	12.4	25%
206	20604A	2.5 - 3.5	12.3	25%
227	22706A	4.5 - 5.5	12.3	25%
224	22406A	4.5 - 5.5	12.2	25%
234	23407B	9.8 - 12.1	12.2	25%
260	26005B	5.3 - 6.9	12.2	25%
225	22505A	6.7 - 10	12.1	25%
235	23507A	5.7 - 7.2	12.1	25%
231	23104A	5 - 9.1	11.9	25%
212	21204A	1.5 - 2.5	11.8	25%
227	22703A	1.5 - 2.5	11.8	25%
234	23405B	6.3 - 9	11.7	25%
242	24207A	14 - 17.3	11.7	25%
252	25205C	4.3 - 6.6	11.7	25%
207	20702A	0.5 - 1.5	11.6	25%
272	27204A	4.6 - 7.3	11.6	25%
251	25104B	5 - 6.5	11.5	25%
286	28603B	1.5 - 2.5	11.4	25%
225	22507A	11.1 - 14	11.3	25%
230	23007A	5.6 - 7.2	11.3	25%
238	23804A	2.5 - 3.5	11.3	25%
278	27804B	1.9 - 2.5	11.3	25%
203	20306A	2.5 - 3.5	11.2	25%
212	21202A	0.5 - 1.5	11.2	25%
230	23006A	4 - 5.6	11.2	25%
207	20703A	1.5 - 2.5	11.1	25%
211 B	21102B	0.5 - 13.4	11.1	25%
223	22304A	3.1 - 5.5	11.1	25%
286	28606B	4.5 - 5.5	11.1	25%
223	22307A	6.7 - 8.6	11	25%
22 A	22A020	3.17 - 3.33	10.9	25%

TABLE 1 - RESULTS BY CONCENTRATIONS (PPM)
REV: 09/22/2003

SAMPLE LOCATION	SAMPLE ID	DEPTH (FT)	MERCURY CONC. (PPM)	PERCENTILE
252	25204C	2.9 - 5.7	10.9	25%
19 A	19A074	12.17 - 12.33	10.8	25%
81 A	81A024	3.83 - 4	10.8	25%
216	21606A	4.5 - 5.5	10.8	25%
229	22905A	3.2 - 4.1	10.8	25%
240	24001A	0 - 0.5	10.7	25%
248	24803A	4.2 - 6.1	10.7	25%
13 A	13A020	3.17 - 3.33	10.6	25%
18 A	18A032	5.17 - 5.33	10.6	25%
245	24505B	5.5 - 8.4	10.6	25%
204	20405A	3.5 - 4.5	10.5	25%
234	23404B	4.5 - 8.1	10.5	25%
225	22506A	8.8 - 11.1	10.4	25%
17 A	17A020	3.17 - 3.33	10.3	25%
230	23005A	2.8 - 4.8	10.3	25%
241	24106A	8.4 - 10	10.3	25%
217	21702A	0.5 - 9	10.2	25%
218	21806A	4.5 - 5.5	10.2	25%
232	23205A	3.8 - 4.9	10.2	25%
16 A	16A010	1.5 - 1.67	10.1	25%
222	22205A	8.8 - 11	10.1	25%
225	22504A	4.6 - 8.8	10.1	25%
237	23701A	0 - 0.5	10.1	25%
276	27605A	9.8 - 12.9	10.1	25%
296	29606B	4.5 - 5.5	10.1	25%
245	24503B	1.5 - 3.7	10	25%
252	25206C	5.7 - 7.5	10	25%
274	27404A	1.8 - 3.4	10	25%
231	23107A	11-13	9.9	25%
226	22606A	6.4 - 7.2	9.8	25%
282	28206A	4.5 - 5.5	9.8	25%
292	29206C	4.5 - 5.5	9.8	25%
296	29605B	3.5 - 4.5	9.8	25%
206	20603A	1.5 - 2.5	9.7	25%
232	23206A	4.9 - 6	9.7	25%
244	24404A	2.5 - 3.5	9.7	25%
257	25703C	4 - 6.3	9.7	25%
271	27104A	3.1 - 4.7	9.7	25%
18 A	18A047	7.67 - 7.83	9.6	25%
240	24006A	3.2 - 3.8	9.6	25%
260	26006B	6.9 - 8.5	9.6	25%

TABLE 1 - RESULTS BY CONCENTRATIONS (PPM)
REV: 09/22/2003

SAMPLE LOCATION	SAMPLE ID	DEPTH (FT)	MERCURY CONC. (PPM)	PERCENTILE
278	27805B	2.5 - 3.2	9.6	25%
292	29202C	0.5 - 1.5	9.6	25%
209	20904B	2.5 - 3.5	9.5	25%
218	21805A	3.5 - 4.5	9.5	25%
231	23103A	2.7 - 5	9.5	25%
272	27205A	6 - 7.8	9.5	25%
21 A	21A010	1.5 - 1.67	9.4	25%
241	24107A	10 - 11.9	9.4	25%
251	25105B	5.7 - 6.9	9.4	25%
252	25207C	7.5 - 9.4	9.4	25%
254	25405A	4.2 - 5.4	9.4	25%
273	27303A	1.5 - 2.4	9.4	25%
294	29405A	3.5 - 4.5	9.4	25%
28 A	28A001	0 - 0.17	9.3	25%
223	22302A	0.5 - 3.1	9.3	25%
228	22802B	0.5 - 1.9	9.2	25%
32 A	32A001	0 - 0.17	9.1	25%
17 A	17A010	1.5 - 1.67	9	25%
228	22803B	1.9 - 4.4	9	25%
241	24103A	3.5 - 5.4	8.9	25%
90 A	90A024	3.83 - 4	8.8	25%
212	21205A	2.5 - 3.5	8.8	25%

NOTES

RED = Red highlighted cell indicates highest mercury concentration identified in core samples taken in the PRRI and PRSA areas.

YELLOW = Yellow highlighted cells indicates the mercury concentration is in the "Top 5" percent of all mercury concentrations identified in core samples taken in the PRRI and PRSA areas.

GREY = Grey highlighted cells indicates the mercury concentration is in the "Top 25" percent of all mercury concentrations identified in core samples taken in the PRRI and PRSA areas.

SOURCES OF MERCURY CONTAMINATION IN THE PRRI AND PRSA AREAS

Table 2
RESULTS BY SAMPLE LOCATIONS
(As of September 22, 2003)

SAMPLE LOCATION	SAMPLE ID	DEPTH (FT)	MERCURY CONC. (PPM)	PERCENTILE
02 A	02A010	1.5 - 1.67	15.6	25%
08 A	08A001	0 - 0.17	12.4	25%
13 A	13A020	3.17 - 3.33	10.6	25%
14 A	14A010	1.5 - 1.67	28.5	5%
16 A	16A010	1.5 - 1.67	10.1	25%
16 A	16A020	3.17 - 3.33	14.6	25%
16 A	16A047	7.67 - 7.83	18.7	5%
16 A	16A074	12.17 - 12.33	13.6	25%
17 A	17A010	1.5 - 1.67	9	25%
17 A	17A020	3.17 - 3.33	10.3	25%
17 A	17A047	7.67 - 7.83	25.1	5%
17 A	17A074	12.17 - 12.33	29.6	MAX
18 A	18A010	1.5 - 1.67	12.7	25%
18 A	18A020	3.17 - 3.33	12.4	25%
18 A	18A032	5.17 - 5.33	10.6	25%
18 A	18A047	7.67 - 7.83	9.6	25%
18 A	18A062	10.17 - 10.33	20.9	5%
19 A	19A020	3.17 - 3.33	12.5	25%
19 A	19A074	12.17 - 12.33	10.8	25%
20 A	20A010	1.5 - 1.67	12.5	25%
20 A	20A095	15.67 - 15.83	13.8	25%
21 A	21A010	1.5 - 1.67	9.4	25%
21 A	21A020	3.17 - 3.33	16.9	5%

SAMPLE LOCATION	SAMPLE ID	DEPTH (FT)	MERCURY CONC. (PPM)	PERCENTILE
21 A	21A047	7.67 - 7.83	16.8	25%
21 A	21A074	12.17 - 12.33	18.3	5%
22 A	22A020	3.17 - 3.33	10.9	25%
22 A	22A047	7.67 - 7.83	27.1	5%
23 A	23A020	3.17 - 3.33	19	5%
28A	28A001	0 - 0.17	9.3	25%
32 A	32A001	0 - 0.17	9.1	25%
59 A	59A010	1.5 - 1.67	17.8	5%
81 A	81A024	3.83 - 4	10.8	25%
90 A	90A012	1.83 - 2	16.3	25%
90 A	90A024	3.83 - 4	8.8	25%
93 A	93A024	3.83 - 4	17.1	5%
95 A	95A019	3 - 3.17	28.1	5%
203	20306A	2.5 - 3.5	11.2	25%
203	20308A	3.5 - 4.5	16.1	25%
203	20310A	4.5 - 5.5	20.4	5%
204	20405A	3.5 - 4.5	10.5	25%
204	20406A	4.5 - 5.5	28.3	5%
206	20602A	0.5 - 1.5	27.8	5%
206	20603A	1.5 - 2.5	9.7	25%
206	20604A	2.5 - 3.5	12.3	25%
206	20605A	3.5 - 4.5	14	25%
206	20606A	4.5 - 5.5	16	25%
207	20702A	0.5 - 1.5	11.6	25%
207	20703A	1.5 - 2.5	11.1	25%
208	20802A	0.5 - 13.7	17.5	5%

TABLE 2 - RESULTS BY SAMPLE LOCATIONS
REV: 09/22/2003

SAMPLE LOCATION	SAMPLE ID	DEPTH (FT)	MERCURY CONC. (PPM)	PERCENTILE
209	20904B	2.5 - 3.5	9.5	25%
209	20905B	3.5 - 4.5	15.3	25%
209	20906B	4.5 - 5.5	18.9	5%
211 B	21102B	0.5 - 13.4	11.1	25%
212	21202A	0.5 - 1.5	11.2	25%
212	21204A	1.5 - 2.5	11.8	25%
212	21205A	2.5 - 3.5	8.8	25%
212	21207A	4.5 - 5.5	18.8	5%
214	21402A	0.5 - 8.4	12.9	25%
214	21403A	8.4 - 10.4	18.5	5%
214	21404A	10.4 - 12.4	17.1	5%
216	21606A	4.5 - 5.5	10.8	25%
217	21702A	0.5 - 9	10.2	25%
218	21805A	3.5 - 4.5	9.5	25%
218	21806A	4.5 - 5.5	10.2	25%
222	22204A	5.2 - 8.8	15.5	25%
222	22205A	8.8 - 11	10.1	25%
222	22206A	7 - 9.9	13.4	25%
222	22207A	11 - 13.5	16	25%
223	22302A	0.5 - 3.1	9.3	25%
223	22304A	3.1 - 5.5	11.1	25%
223	22305A	5.5 - 6.7	13.4	25%
223	22306A	4.3 - 6.1	12.4	25%
223	22307A	6.7 - 8.6	11	25%
224	22403A	1.5 - 2.5	12.9	25%
224	22404A	2.5 - 3.5	17.3	5%
224	22405A	3.5 - 4.5	14.5	25%
224	22406A	4.5 - 5.5	12.2	25%
225	22504A	4.6 - 8.8	10.1	25%
225	22505A	6.7 - 10	12.1	25%

TABLE 2 - RESULTS BY SAMPLE LOCATIONS
REV: 09/22/2003

SAMPLE LOCATION	SAMPLE ID	DEPTH (FT)	MERCURY CONC. (PPM)	PERCENTILE
225	22506A	8.8 - 11.1	10.4	25%
225	22507A	11.1 - 14	11.3	25%
226	22604A	4.3 - 6.4	12.5	25%
226	22605A	5.3 - 6.8	19.2	5%
226	22606A	6.4 - 7.2	9.8	25%
227	22703A	1.5 - 2.5	11.8	25%
227	22704A	2.5 - 3.5	16.7	25%
227	22705A	3.5 - 4.5	12.9	25%
227	22706A	4.5 - 5.5	12.3	25%
228	22802B	0.5 - 1.9	9.2	25%
228	22803B	1.9 - 4.4	9	25%
228	22804B	4.4 - 7.4	18.1	5%
228	22805B	5.9 - 8	20.5	5%
229	22905A	3.2 - 4.1	10.8	25%
229	22906A	4.1 - 4.9	15.7	25%
230	23005A	2.8 - 4.8	10.3	25%
230	23006A	4 - 5.6	11.2	25%
230	23007A	5.6 - 7.2	11.3	25%
231	23103A	2.7 - 5	9.5	25%
231	23104A	5 - 9.1	11.9	25%
231	23105A	7.1 - 10.1	14.3	25%
231	23106A	9.1 - 11	17	5%
231	23107A	11 - 13	9.9	25%
232	23205A	3.8 - 4.9	10.2	25%
232	23206A	4.9 - 6	9.7	25%
234	23404B	4.5 - 8.1	10.5	25%
234	23405B	6.3 - 9	11.7	25%
234	23406B	8.1 - 9.8	17.2	5%
234	23407B	9.8 - 12.1	12.2	25%
235	23504A	3.3 - 4.9	13.6	25%
235	23505A	4.1 - 5.3	15.8	25%
235	23506A	4.9 - 5.7	18.7	5%

TABLE 2 - RESULTS BY SAMPLE LOCATIONS
REV: 09/22/2003

SAMPLE LOCATION	SAMPLE ID	DEPTH (FT)	MERCURY CONC. (PPM)	PERCENTILE
235	23507A	5.7 - 7.2	12.1	25%
237	23701A	0 - 0.5	10.1	25%
237	23702A	0.5 - 1.5	15.3	25%
238	23803A	1.5 - 2.5	13.2	25%
238	23804A	2.5 - 3.5	11.3	25%
240	24001A	0 - 0.5	10.7	25%
240	24002A	0.5 - 1.2	14.5	25%
240	24004A	1.9 - 2.5	13.1	25%
240	24005A	2.5 - 3.2	13.8	25%
240	24006A	3.2 - 3.8	9.6	25%
241	24103A	3.5 - 5.4	8.9	25%
241	24104A	5.4 - 8.4	20.4	5%
241	24105A	6.9 - 9.2	16	25%
241	24106A	8.4 - 10	10.3	25%
241	24107A	10 - 11.9	9.4	25%
242	24203A	2.6 - 4.6	13.3	25%
242	24204A	4.6 - 10.5	19.4	5%
242	24205A	7.5 - 12.2	21.9	5%
242	24206A	10.5 - 14	14.4	25%
242	24207A	14 - 17.3	11.7	25%
243	24303A	1.5 - 2.6	16.1	25%
243	24304A	2.6 - 3.6	13.3	25%
243	24305A	3.6 - 4.6	13.3	25%
243	24306A	4.6 - 5.7	16.8	5%
244	24404A	2.5 - 3.5	9.7	25%
245	24503B	1.5 - 3.7	10	25%
245	24504B	3.7 - 7.3	12.6	25%
245	24505B	5.5 - 8.4	10.6	25%
245	24506B	7.3 - 9.4	14.5	25%
248	24803A	4.2 - 6.1	10.7	25%
251	25104B	5 - 6.5	11.5	25%

TABLE 2 - RESULTS BY SAMPLE LOCATIONS
REV: 09/22/2003

SAMPLE LOCATION	SAMPLE ID	DEPTH (FT)	MERCURY CONC. (PPM)	PERCENTILE
251	25105B	5.7 - 6.9	9.4	25%
252	25204C	2.9 - 5.7	10.9	25%
252	25205C	4.3 - 6.6	11.7	25%
252	25206C	5.7 - 7.5	10	25%
252	25207C	7.5 - 9.4	9.4	25%
254	25405A	4.2 - 5.4	9.4	25%
257	25703C	4 - 6.3	9.7	25%
259	25902B	0.5 - 1.7	15.7	25%
260	26004B	3.7 - 5.3	16	25%
260	26005B	5.3 - 6.9	12.2	25%
260	26006B	6.9 - 8.5	9.6	25%
270	27004A	1.8 - 2.6	13.6	25%
270	27006A	2.6 - 3.2	15.7	25%
271	27104A	3.1 - 4.7	9.7	25%
272	27204A	4.6 - 7.3	11.6	25%
272	27205A	6 - 7.8	9.5	25%
273	27303A	1.5 - 2.4	9.4	25%
273	27304A	2.4 - 3.4	13.2	25%
274	27403A	0.9 - 2.8	15.8	25%
274	27404A	1.8 - 3.4	10	25%
275	27504A	3.1 - 4.4	20.2	5%
276	27605A	9.8 - 12.9	10.1	25%
278	27803B	1.2 - 1.9	13.2	25%
278	27804B	1.9 - 2.5	11.3	25%
278	27805B	2.5 - 3.2	9.6	25%
278	27806B	3.2 - 3.9	22.6	5%

TABLE 2 - RESULTS BY SAMPLE LOCATIONS
REV: 09/22/2003

SAMPLE LOCATION	SAMPLE ID	DEPTH (FT)	MERCURY CONC. (PPM)	PERCENTILE
282	28206A	4.5 - 5.5	9.8	25%
285	28503A	1.5 - 2.5	15.7	25%
285	28506A	4.5 - 5.4	13.9	25%
286	28603B	1.5 - 2.5	11.4	25%
286	28605B	3.5 - 4.5	18	5%
286	28606B	4.5 - 5.5	11.1	25%
292	29202C	0.5 - 1.5	9.6	25%
292	29204C	2.5 - 3.5	14.7	25%
292	29206C	4.5 - 5.5	9.8	25%
294	29405A	3.5 - 4.5	9.4	25%
296	29605B	3.5 - 4.5	9.8	25%
296	29606B	4.5 - 5.5	10.1	25%
PRP-99-04	SD-3	3.0 - 5.0	21.6	5%

NOTES

- RED =** Red highlighted cell indicates highest mercury concentration identified in core samples taken in the PRRI and PRSA areas.
- YELLOW =** Yellow highlighted cells indicates the mercury concentration is in the "Top 5" percent of all mercury concentrations identified in core samples taken in the PRRI and PRSA areas.
- GREY =** Grey highlighted cells indicates the mercury concentration is in the "Top 25" percent of all mercury concentrations identified in core samples taken in the PRRI and PRSA areas.

NOTICE ABOUT OVERSIZED MAP

THIS MAP IS AN OVERSIZED DOCUMENT. IT IS AVAILABLE FOR REVIEW AT THE
U.S. EPA SUPERFUND RECORDS CENTER, 290 BROADWAY, 18TH FLOOR, NEW
YORK, NY 10007
PHONE: (212) 637-4308.

TIERRA SOLUTIONS, INC.

**SOURCES OF MERCURY TO THE
PRRI/PRSA AREAS**

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

FIGURE

3

NOTICE ABOUT OVERSIZED MAP

THIS MAP IS AN OVERSIZED DOCUMENT. IT IS AVAILABLE FOR REVIEW AT THE
U.S. EPA SUPERFUND RECORDS CENTER, 290 BROADWAY, 18TH FLOOR, NEW
YORK, NY 10007
PHONE: (212) 637-4308.

TIERRA SOLUTIONS, INC.

**SOURCES OF MERCURY TO THE
PRSA/PRRI AREAS-ZOOM IN VIEW**

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

FIGURE

4

A & L Dyes

A & L DYERS, INC.

DYERS OF SYNTHETIC AND NATURAL YARNS

AGL

36 SEABURY STREET • NEWARK, NJ 07104
TELEPHONE: (201) 484 6400

January 23, 1997

Emergency and Remedial Response Division

U.S. Environmental Protection Agency
290 Broadway 19 th Floor

New York, New York, 10007-1866

JAN 27 1997

ATT: Mr. Pat Evangelista.

RE: Answers to "REQUEST FOR INFORMATION" , Your letter of 12/24/96.

(1) Approximately 20 years- from Dec 1976 to present.

(2) A- NO

B- NO

(3) NO to the best of our knowledge

(4) A-Our facility is a dyeing operation: to facilitate a dyeing it is necessary to use dyestuff and chemicals diluted in large quantities of water, which is then heated to optimum temperature.

B-No hazardous wastes as defined by N.J.A.C. 7:26 et. seq are generated as a result of the dyeing process

B-i NA

B-ii NA

B-iii NA

(5) Waste water is generated and is discharged to the sanitary sewer system under a permit with the Passaic Valley Sewerage Commissioners . SEE ATTACHED

A. Louis Mondejar and Arthur Kornberg

B. NA

C All drums, containers and bags are stored in the mixing room and dye area.

C-i NA

C-ii NA

d- NA

(6) A-i Yes

A-ii NO

A-iii NA

A-iv SEE ATTACHED ANALYSIS of results of the 1996 wastewater required by the PASSAIC VALLEY SEWERAGE COMMISSION.

B-i Yes- the Floor drains were always been connected to the sanitary sewer.

AAA000013

Table 1 Area 6 and Area 9			
Date	11/8/95	2/19/96	NJDEP Action Level
Lab ID #	2578-01	336-01	NA
Field ID #	1-100	C2-1	NA
Matrix	sediment	soil	NA
Depth (inches)	na	10"-16"	NA
Volatile Organics (ppm)	ND		
methylene chloride	ND	1.28 JB	1/49/210
Total VOCs	ND	1.28 JB	1,000
Total TICs	ND	ND	na
Total VO's + TICs	ND	1.28 JB	1,000
Semivolatiles			
bis(2-Ethylhexyl)phthalate	20.1	72.7	49/100/210
Benzo(b)fluoranthene	ND**	ND	0.9
Benzo(a)anthracene	ND**	ND	0.9
Benzo(a)pyrene	ND**	ND	0.66
Benzo(k)fluoranthene	ND**	ND	0.9
Dibenz(a,h)anthracene	ND**	ND	0.66
3,3 Dichlorobenzidine	ND**	ND	2
Hexachlorobenzene	ND**	ND	0.66
Indeno(1,2,3-cd)pyrene	ND**	ND	0.9
N-Nitrosodi-n-propylamine	ND**	ND	0.66
Total BN's	20.1	72.7	10,000
Total TIC's	2,130	700	na
Total BN's + TIC's	2,150.2	772.70	10,000
PCB's	ND	NA	0.49/2/50
Pesticides	ND	NA	na
Metals			
Antimony	ND	ND	14
Arsenic	6.14	1.32	20
Beryllium	0.26	0.39	1
Cadmium	1.67	ND	1
Chromium	198	10.6	78,000
Copper	324	15.5	600
Lead	118	16.7	400
Mercury	1.52	0.16	14
Nickel	26	8.13	250
Selenium	ND	ND	63
Silver	1.24	ND	110
Thallium	ND	ND	2
Zinc	166	33.8	1,500

J - compound detected at a value below the detection limit but greater than zero

B - indicates that the compound was also detected in the blank

* - above applicable NJDEP Cleanup Criterion

** - compounds were not detected but MDL's are above the applicable standard

ND - not detected

na - not applicable



AN ENVIRONMENTAL LABORATORY
A SUBSIDIARY OF CFM INCORPORATED

628 ROUTE 10 - WHIPPANY, NEW JERSEY 07981 - (201) 684-2111

January 13, 1986

STATE CERTIFIED WATER LABORATORY

ID. No. 14367

For: A & L Dyers
36 Seabury Street
Newark, New Jersey 07104

Attention: Mr. Arthur Kornberg

☒ CHEMICAL ☐ WATER
☒ PHYSICAL ☒ WASTEWATER
☐ BACTERIOLOGICAL ☐ SLUDGE
☐ OTHER

Sample Number K-13-18

Page 1 of 5

Sample Description: Wastewater Composite

Location:

Date 11/12 - Time

11/13/85

We certify that all tests were conducted in accordance with EPA approved methods and this report is a true representation of the results obtained from our analysis of this material.

Laboratory Supervisor

Laboratory Manager

ANALYSIS

PARAMETER

RESULTS

Total Solids, mg/L	3862
Total Mineral Solids, mg/L	3508
Total Suspended Solids, mg/L	210
Mineral Suspended Solids, mg/L	120
Emulsified Oil & Grease, mg/L	101.6
Biochemical Oxygen Demand, mg/L	137
Chemical Oxygen Demand, mg/L	680
Total Organic Carbon, mg/L	100
Sulfide, mg/L	< 1.0
pH, Units	6.96
Ammonia-Nitrogen, mg/L	0.84
Ortho Phosphate as P, mg/L	0.396
Cadmium, mg/L	0.015
Total Chromium, mg/L	0.04
Copper, mg/L	0.218
Lead, mg/L	0.09
Mercury, mg/L	0.001
Zinc, mg/L	0.415

CFM Environmental Services

000021

5454 ROUTE 22 WEST • SOMERVILLE, NEW JERSEY 08876 • (908) 707-4545 • FAX (908) 707-8887

State Certified
Laboratory No. 18367

Report Date: September 21, 1990

For: A & L Dyers
36 Seabury Street
Newark, New Jersey 07104

Page 1 of 4

Sample Data

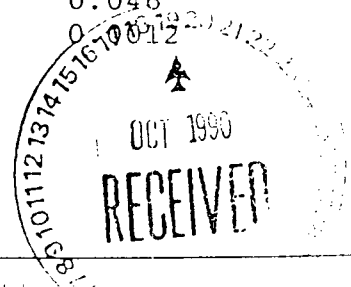
Number: H-16-47

Date: 8/15/90

Description: PVSC Sampling Requirements 1990 (Composite)

ALL ANALYSES ARE PERFORMED IN ACCORDANCE WITH THE ENVIRONMENTAL
PROTECTION AGENCY APPROVED METHODS AND PROTOCOL.Bernadette Macchia/AMH
Laboratory ManagerPARAMETERRESULTS

Total Solids, mg/L	942
Total Mineral Solids, mg/L	502
Total Mineral Suspended Solids, mg/L	2
pH, Units	7.49
Chemical Oxygen Demand, mg/L	475.0
Total Organic Carbon, mg/L	160.0
Phenol, mg/L	0.078
Petroleum Hydrocarbons, mg/L	0.57
Oil and Grease, mg/L	16.59
Cyanide, mg/L	0.006
Ammonia-Nitrogen, mg/L	1.31
Total Kjeldahl Nitrogen, mg/L	5.73
Ortho Phosphorus, mg/L	0.09
Sulfide, mg/L	1.1
Antimony, mg/L	0.44
Arsenic, mg/L	< 0.00050
Boron, mg/L	< 0.10
Cadmium, mg/L	< 0.0050
Chromium, mg/L	< 0.050
Copper, mg/L	0.038
Iron, mg/L	0.21
Lead, mg/L	0.046
Mercury, mg/L	0.0012



**Crompton & Knowles Corporation**

Dyes and Chemicals Division

Route 724
Gibraltar, PennsylvaniaMailing Address:
P.O. Box 341 (500 Pear Street)
Reading Pennsylvania 19603
Telephone: (215) 582-8765
TWX 510-651-4493

October 30, 1985

Mr. Arthur Kornburg
A&L Dyers, Inc.
36 Seabury Street
Newark, NJ 07104

Dear Mr. Kornburg:

We have reviewed the following products which you are currently purchasing from Crompton & Knowles:

Sevron Fast Red CBL
Sevron Blue ER
Sevron Blue 5GXM
Basic Black PSR
Intralan Black BGL

In regard to metal content, only one product, **INTRALAN BLACK BGL**, is a chromium premetallized dye. Premetallized dyes usually contain about 3% chromium. None of the other products are metallized dyes and only trace amounts of "tramp metals" would be expected to be present. Dyes are known to contain these "tramp metals" even when the metal has not specifically been used in the manufacture of the dye.

We trust this information will answer your questions. However, please let us know if we may be of further assistance.

Sincerely,


R. H. Horning

Director of Environmental Affairs

RHH:seo/485(7)
cc J. Toner

Mobay



Mobay
Chemical Corporation

Dyes and Pigments Division

Mobay Road
Pittsburgh, PA 15205 9741
Telephone: 412/777 2000

October 30, 1985

A & L Dyers Incorporated
36 Seabury Street
Newark, NJ 07104
Attn.: A. Kornberg

Dear Mr. Kornberg:

At the request of our Mr. H. Zockoll, we wish to supply you with the attached trace heavy metal analysis of the following products.

Levafix Brilliant Yellow E3G
Resolin Blue BBLS
Resolin Red FB

This information is not known for the following products.

Astrazon Orange G200
Astrazon Pink FBB
Astrazon Red FBL 180
Telon Yellow FGL 200
Telon Fast Rubine A-5BLW
Telon Fast Blue A3GL
Telon Fast Blue A-FN
Levafix Golden Yellow E-G
Levafix Brilliant Red E-4B
Levafix Scarlet E-2GA
Levafix Turquoise Blue EG
Levafix Blue E-FBA 200
Levafix Brilliant Blue E-FFA
Levafix Black E-B
Resolin Brilliant Yellow 10GN 200
Resolin Red BBL
Resolin Blue FBL
Phorwite CL Solution
Levegal FTS

Writer's Direct Dial Number

Over and Pigments Division

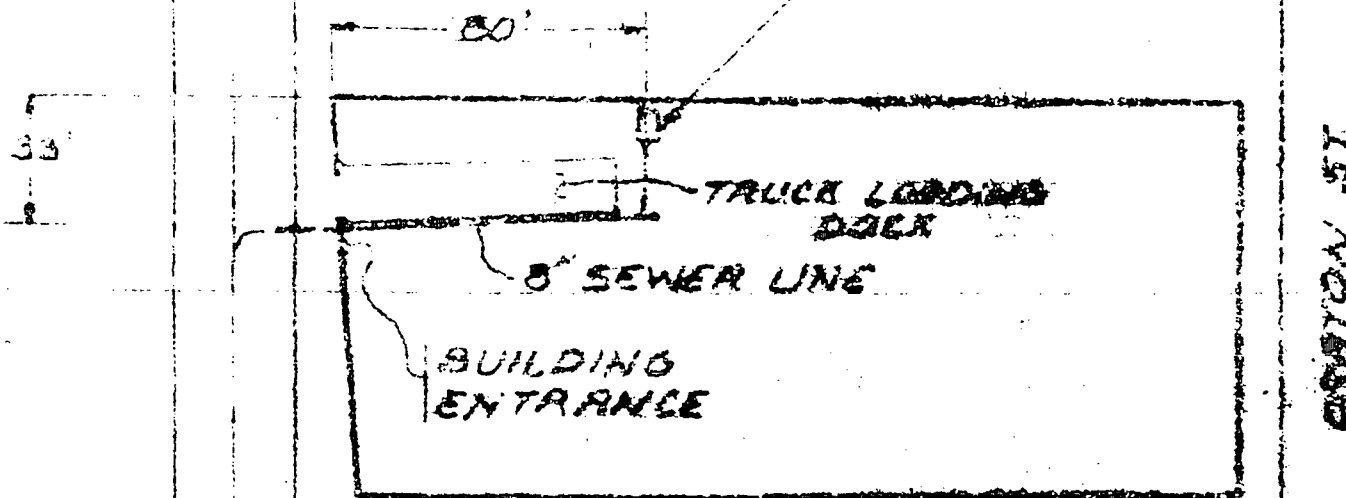
TYPICAL ANALYSIS OF METALS CONTENTS PARTS PER MILLION

PRODUCT	Antimony	Selenium	Mercury	Arsenic	Lead	Copper	Chromium	Cadmium	Cobalt	Zinc	Barium	Nickel
Levafix Brill Yellow EGG	NA	NA	<0.05	NA	38	18	2	NA	NA	7	NA	NA
Resolin Blue 98LS	NA	NA	0.1	NA	140	221	5	6	NA	22	NA	NA
Resolin Red FB	NA	NA	1.2	NA	92	16	22	<10	NA	NA	NA	NA

120-74534

SEABURY ST
CITY SEWER

4" X 8" MAIN DRAIN HOLE SEWER
DISCHARGE POINT, 1' OF THE
WALL IN SIDE OF THE BUILDING



COMPANY NAME

~~SEABURY ST~~ AT-LDYES

36 SEABURY ST.

NEWARK, N.J. 07102

SCALE 1"=10'

DATE

1/1/77



DYERS OF SYNTHETIC AND NATURAL YARNS

120-7454

A&L

38 SEABURY STREET - NEWARK, N. J. 07104
TELEPHONE: (201) 484-8400

UNANIMOUS CONSENT OF DIRECTORS
IN LIEU OF A SPECIAL MEETING
OF

THE BOARD OF DIRECTORS OF
A & L DYERS, INC.

THE UNDERSIGNED, BEING ALL OF THE DIRECTORS OF
A & L DYERS, INC., A CORPORATION OF THE STATE OF NEW JERSEY,
LOCATED AT 36 SEABURY STREET, NEWARK, N.J. AUTHORIZE AND
APPROVE THE FOLLOWING ACTION, WHICH ACTION IS HEREBY DEEMED TO
BE EFFECTIVE AS OF THIS 23rd DAY OF JANUARY 1986 to MAKE APPLIC-
ation to PASSAIC VALLEY SEWERAGE COMMISSION FOR THE USE OF
THE EXISTING INDUSTRIAL SEWER CONNECTION.

THE UNDERSIGNED, BY AFFIXING THEIR RESPECTIVE SIGNATURES
HERE TO DO HEREBY CONSENT TO, AUTHORIZE AND APPROVE THE FORE-
GOING RESOLUTION IN THEIR CAPACITY AS ALL OF THE DIRECTORS OF
A & L DYERS, INC. AS OF THE DAY AND YEAR SET FORTH ABOVE.


ARTHUR KORNBERG


LOUIS MONDEJAR

HEAVY METALS SOURCE DETERMINATION STUDY

IN COMPLIANCE WITH OCEAN DUMPING PERMIT
NO. II NJ003 INTERIM SECTION 8(c)

Passaic Valley Sewerage Commissioners

JOSEPH M. KEEGAN	- Chairman
BEN W. GORDON	- Vice Chairman
THOMAS J. CIFELLI	- Commissioner
VINCENT CORRADO	- Commissioner
ROBERT J. DAVENPORT	- Commissioner
RICHARD M. GIACOMARRO	- Commissioner
CHARLES A. LAGOS	- Commissioner
CARMINE T. PERRAPATO	- Executive Director
ROCCO D. RICCI	- Chief Engineer

PHASE II

APRIL 1980

DRAFT

Elson T. Killam Associates, Inc.

Environmental and Hydraulic Engineers



KI 1013740

February 15, 1986
 Passaic Valley Sewerage Commissioners
 600 Wilson Avenue
 Newark, NJ 07105

Mr. Byers
 100 Liberty Street
 Newark, NJ 07104

Dear Sir:

As per your request, the Elson T. Killam heavy metal study data for your company is as follows:

Flow 0.015 MGD	(LBS/DAY)	(PPM)
TOTAL CADMIUM	0.001	0.001
TOTAL CHROMIUM	0.0	0.000
TOTAL COPPER	0.014	0.100
TOTAL LEAD	0.003	0.020
TOTAL NICKEL	0.013	0.100
TOTAL ZINC	0.011	0.080
TOTAL ARSENIC	0.000	0.000
TOTAL MERCURY	0.0000	0.000

Very truly yours,

Frank P. D'Ascensio

Frank P. D'Ascensio

PASSAIC VALLEY SEWERAGE COMMISSION - HEAVY METAL SOURCE DETERMINATION
 PHASE II INDUSTRIAL CONTRIBUTION
 AFTER PRETREATMENT
 SUB-AREA 0

PAGE 1

CONTROL NO.	NAME AND ADDRESS OF INDUSTRY	FLOW MGD	TOTAL CADMIUM LBS/DAY (MG/L)	TOTAL CHROMIUM LBS/DAY (MG/L)	TOTAL COPPER LBS/DAY (MG/L)	TOTAL LEAD LBS/DAY (MG/L)	TOTAL NICKEL LBS/DAY (MG/L)	TOTAL ZINC LBS/DAY (MG/L)	TOTAL ARSENIC LBS/DAY (MG/L)	TOTAL MERCURY LBS/DAY (MG/L)
390	CHARLES BRESLER CO. 219 SOUTH 10TH ST. EAST ORANGE	0.0040	0.000 (0.012)	0.083 (2.500)	0.012 (0.359)	0.001 (0.022)	0.001 (0.038)	0.003 (0.166)	0.000 (0.001)	0.0000 (0.001)
920	A & L DYERS INC. 34 SEABURY ST. NEWARK	0.0150	0.001 (0.005)	0.005 (0.038)	0.014 (0.108)	0.003 (0.020)	0.013 (0.100)	0.011 (0.087)	0.000 (0.001)	0.0000 (0.000)
925	ADCO CHEMICAL RUTHERFORD ST. NEWARK	0.0020	0.000 (0.008)	0.002 (0.090)	0.004 (0.220)	0.001 (0.030)	0.000 (0.010)	0.002 (0.410)	0.000 (0.001)	0.0001 (0.00)
930	ALLIANCE CHEMICAL INC. 31 AVE. F NEWARK	0.1170	0.027 (0.028)	0.309 (0.317)	0.418 (0.428)	0.293 (0.300)	0.248 (0.254)	1.756 (1.800)	0.001 (0.001)	0.0024 (0.002)
940	ALL PLATING & CASTING INC. 589 FERRY ST. NEWARK	0.0190	0.015 (0.093)	0.014 (0.091)	0.285 (1.800)	0.003 (0.022)	0.285 (1.800)	0.056 (0.351)	0.039 (0.245)	0.0001 (0.001)
950	ANODIZING CORP. 39 AVE. L NEWARK	0.0090	0.000 (0.005)	0.124 (1.650)	0.010 (0.135)	0.021 (0.282)	0.001 (0.011)	0.005 (0.066)	0.000 (0.001)	0.0003 (0.003)
952	ARKANSAS CO. INC. 185 FOUNDRY ST. NEWARK	0.0280	0.002 (0.007)	0.008 (0.033)	0.008 (0.036)	0.021 (0.089)	0.007 (0.032)	0.074 (0.315)	0.000 (0.001)	0.0029 (0.012)
955	AROL CHEMICAL PRODUCTS CO. 649 FERRY ST. NEWARK	0.0000	0.000 (0.005)	0.000 (0.005)	0.000 (0.008)	0.000 (0.005)	0.000 (0.005)	0.000 (0.014)	0.000 (0.001)	0.0000 (0.000)
960	ART METAL U. S. A. INC. 300 PASSAIC ST. NEWARK	0.1480	0.010 (0.008)	3.086 (2.500)	0.128 (0.104)	0.370 (0.300)	0.100 (0.10)	2.222 (1.800)	0.001 (0.001)	0.0006 (0.000)
970	ASHLAND OIL INC. 400 BOREMUS AVE. NEWARK	0.3140	0.047 (0.018)	0.202 (0.077)	0.141 (0.054)	0.278 (0.106)	0.013 (0.005)	0.526 (0.201)	0.003 (0.001)	0.0029 (0.001)

90

COMPUTER OUTPUT
 RLLO13849



Site Descriptions

For Hazardous Waste Sites
In New Jersey

1984/85

N.J. Department of Environmental Protection

Division of Waste Management • Hazardous Site Mitigation Administration

Site Name

Albert Steel Drum Company
Newark
Essex County

Site Description

The Albert Steel Drum Company site is located at 338 Wilson Avenue, south of the Wilson Avenue Bridge and east of Avenue L. This is an abandoned drum dump with drums both buried and on the surface. Due to non-payment of back taxes, site ownership was assumed by the Newark Redevelopment and Housing Authority. Presently a section of the building is leased to the Vitamin Company of Welch, Holme, Clark and Prentiss. An unknown number of drums with chemicals are scattered throughout the site. During a New Jersey Department of Environmental Protection (NJDEP) site inspection in 1979, piles of greyish powder were observed throughout the site and in plastic bags labeled "Troysan-Mercury Acetate-Poison-subject to bacterial decomposition".

Environmental Impact

On-site sampling has revealed the presence of volatile organic chemicals, heavy metals and pesticides. Analysis of the grey solid substance indicated the presence of mercury.

The banks of Pierson's Creek (Peirson's Creek traverses the property) show evidence of the underground disposal of drums containing chemical waste.

Status

The current and previous site owners have entered into a Consent Agreement with NJDEP for the payment of site investigations. The Albert Steel Drum Company is included in NJDEP's Management Plan for hazardous waste site cleanups and it will be addressed with State Funds, if necessary.

PRENTISS DRUG AND CHEMICAL COMPANY
(AKA ALBERT STEEL DRUM COMPANY)
338 WILSON AVENUE
NEWARK, ESSEX COUNTY, NEW JERSEY
EPA ID# NJD002443331

GENERAL INFORMATION AND SITE HISTORY

The Prentiss Drug and Chemical, Albert Steel Drum (PDC/ASD) Site is located on nine acres on Wilson Avenue in Newark, Essex County. It lies in a heavily industrialized section of Newark, with the nearest residential or commercial area about one quarter of a mile to the west across the Pulaski Skyway. The site is bordered to the north-northeast by Wilson Avenue, to the southeast by Central Railroad and the Welsh, Holmes and Clark Company, to the southwest by the Troy Chemical Company, and to the northwest by an automobile junkyard.

The site has been occupied by numerous industries since the early 1900s and an undated city map indicates approximately twenty buildings to be present, many of which may have had multiple occupants. The uses of most of these buildings are unknown. Of the former occupants of the site which could be identified, their operating dates are generally sketchy. These occupants include the Prentiss Drug and Chemical Company (PDC), the Albert Steel Drum Company (ASD), Greenpoint Drum and Barrel Corporation, Welch, Holmes, and Clark Company (WHC), T. Fiore Demolition, Courtesy Containers Corporation, and an automobile junkyard. Known details of their operations are described below.

SITE OPERATIONS OF CONCERN

1. PRENTISS DRUG AND CHEMICAL COMPANY

PDC manufactured pesticides and rodenticides from approximately 1956 until the process was discontinued in June 1982. The plant shut down permanently in August 1982. Chemicals used by PDC in the manufacture of pesticides reportedly included pentachlorophenol (PCP), lindane, methoxychlor, dieldrin, aldrin, and endrin. PDC manufactured a rodenticide known as "Rax Powder" for a number of years. "Rax Powder" consists of warfarin [3-(4-acetyl benzene)-4-hydroxycoumarin], a colorless odorless solid at a concentration of 0.5%, along with a green dye.

Lindane was reportedly purchased by the facility at a rate of 25 to 100 tons per year for use in the manufacture of pesticides. Lindane, a Class II pesticide, is moderately likely to be associated with the presence of halogenated dibenzo-p-dioxins, while PCP, which was reportedly manufactured on site, is a Class I pesticide and highly likely to be associated with their presence.

Little information was available concerning EPA or NJDEP inspections of the PDC facility, however, an inspection was conducted in 1977 by NJDEP. Building floordrains which emptied directly to the ground were observed and process wastewater which emptied into sanitary sewers was noted.

2. In September 1970, sediment samples were taken by an unidentified party, possibly through the NJDEP Office of Science and Research's Abandoned Sites Investigation Program. Sample locations, as identified from a sketch, were in the vicinity of the ASD Building. Results indicated the presence of volatile solids on a dry weight basis ranging from 1.8% to 54.1%.
3. The NJDEP became involved with this site in 1979 at the request of the Newark Department of Engineering. An inspection by the city on May 3, 1979 revealed hundreds of plastic bags labeled "Troysan-Mercury Acetate-Poison" as well as drums and piles of the same greyish powder. A sample of the powder was taken and found to contain phenyl mercuric acetate and mercury. The concentration of mercury was given as 0.5% as Hg. Also noted during this inspection was that the banks of Pearson's Creek showed evidence of buried drums. It should be noted that Troysan is a trade name for mercaptobenzothiazole which is used as a fungicide.
4. In June 1979, the EPA sampled several points along Pearson's Creek and random puddles and sediments on-site. Elevated levels of mercury were detected in all samples, however levels were higher downstream of the PDC/ASD site. In July 1979, the EPA conducted further surface water and sediment sampling. Samples from the PDC/ASD site showed mercury levels in surface water of 55.0 ug/l, mercury levels in sediment up to 191 mg/kg, and benzene levels in water of 1.1 ug/l.
5. The Division of Water Resources (DWR) initiated an investigation into the site in July 1980 involving twenty soil borings and a total of eighty soil samples. Analysis of these samples indicated excessive levels of zinc, lead, cadmium, mercury, pesticides, (lindane, DDD, dieldrin and heptachlor) and volatile organics. The concentration of volatiles were high, ranging from 1.2% to 23.0% (dry weight) in the soil samples analyzed.

Observations noted during the borings included the presence of stained soils and strong chemical odors in some borings to depths of 12 feet. One boring was halted when a highly contaminated (black, oily) pocket of ground water was encountered, while another boring encountered and punctured a full drum at a depth of 2 feet. Additionally, a concrete pit was noted in a building used by Albert Steel Drum. It measured ten by fifteen feet, was an unknown depth and contained a thick black liquid. It should be noted that in April 1981, six archived boring samples still exhibited a strong chemical odor.

6. The Prentiss Drug and Chemical site was investigated in 1985 in conjunction with the NJDEP Phase II Dioxin Investigation Program. In May 1985, five soil samples were collected from the low-lying areas adjacent to the walls of the PDC building. Analysis indicated the presence of 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) in low concentrations (0.47 - 2.7 ppb) in four of the five samples. Sampling was limited due to the presence to fill and demolition debris.

Due to the presence of dioxin above the EPA action level of 1 ppb, a follow-up investigation, including soil augering to sample native soils, was conducted in June 1985. A total of 26 soil/sediment and wipe samples were collected for 2,3,7,8-TCDD analysis. Three samples exceeded the EPA action level with the greatest concentration being 214 ppb at a depth of 24 inches. Six samples collected were analyzed for priority pollutants plus forty. Pesticides were detected at levels up to 9.0 ppm, as well as two PCB compounds at 13 ppm and 16 ppm. Base Neutral compounds detected include fluoranthene at 177 ppm, benzo (k) fluoranthene at 115 ppm, and benzo (a) pyrene, a known carcinogen, at 83.8 ppm.

The discovery of dioxin contamination led to the EPA and NJDEP entering into a cooperative agreement to conduct a complete RI/FS at this site with the NJDEP acting as the lead agency. TRC Environmental Consultants Incorporated (TRC) was selected by NJDEP to conduct the RI/FS under the X-312 Term Feasibility Contract in September 1986.

PRIORITY DESIGNATION

Due to the extensive site-wide contamination with organics, inorganics, and dioxin this site is assigned a high priority for inspection.

SUMMARY OF SAMPLING DATA

During Phase I of the RI/FS and previous sampling episodes, a total of at least 9 air samples, 226 soil/sediment samples, 11 surface water samples, 10 wipe samples, 4 drum samples, and 6 ground water monitoring well samples were collected to determine the presence and extent of contamination on site. These sampling events are described below.

1. Sampling Date: September 21, 1978
Sampled By: Unknown. These samples may have potentially been collected through the NJDEP Office of Science and Research's Abandoned Sites Investigation Program.
Samples: Six soil/sediment samples appeared to be analyzed for volatile organics only. No quantitative results were given. Sample locations are ascertained from a sketch and are near the Albert Steel Drum Building.
Laboratory: Unknown.
Sample Description:
 - Soil 1 - taken in culvert near the border of Troy Chemical Co.
 - Soil 3 - taken in open pit with visible ground water flow.
 - Soil 4 - taken at the base of the Albert Steel Drum Building.

Soil 5 - taken at the concrete drum storage area.
Soil 6 - taken to the west of the Albert Steel Drum Building.
Soil 7 - taken near a drum storage area.

All locations are outlined on a sketch located in Attachment A.

Contaminants Detected: No quantitative results were available. Compounds detected include trichlorofluoromethane, methylene chloride, 2-dichloroethylene isomer, 1,1,1 trichloroethane, carbon tetrachloride, trans-1,3-dichloropropene, trichloroethylene, cis-1,3-dichloropropene, benzene, perchloroethylene, toluene, chlorobenzene, ethyl benzene, xylenes, freon 113, pentane isomer, tetrachlorocyclohexane, hexane, and chloroform. The commonly detected compounds included toluene, benzene, 1,1,1-trichloroethane, and trichloroethylene. Volatile solids on a dry weight basis ranged from 1.8% to 54.1%, and oil and grease was present up to 31.6% on a dry weight basis.

QA/QC: None reported

File Location: Division of Hazardous Site Mitigation, Central Files.

2. Sampling Date: May 3, 1979

Sampled By: Newark Department of Engineering

Samples: 1 sample of grey solid material

Laboratory: SCA Chemicals Waste Service Inc.
P.O. Box 200
Model City, New York 14017
(716)-754-8231.

Sample Description: Solid grey silver material scattered at various locations throughout the site near bags which were labeled "Troysan - Mercury Acetate-Poison-Subject to bacterial decomposition."

Contaminants Detected:

Phenyl Mecerio Acetate	20%
Mercury as Metal	12%
Inerts	80%

QA/QC: None Reported. It is unknown whether this was a certified laboratory at that time.

File Location: Division of Hazardous Site Mitigation, Central Files.

3. Sampling Date: September 7, 1979

Sampled By: EPA Region II

Samples: 8 soil/sediment and water samples to be analyzed for mercury. Two samples were taken from PDC/ASD Site.

Laboratory: Unknown

Sample Description: Samples were collected to determine a possible source for elevated levels of mercury in Pearson's Creek, upstream and downstream of the neighboring Troy Chemical Company. These two upstream samples were taken from the PDC/ASD Site.

Contaminants Detected:

<u>Sample Location</u>	<u>Surface Water (ug/l)</u>		<u>Sediment</u>
	<u>Mercury</u>	<u>Benzene</u>	<u>(mg/kg) Mercury</u>
A. 100 feet upstream of Troy Chemical (near Culvert outlet)	ND	not analyzed	140.0
B. 5 feet upstream of Troy Chemical.	55.0	1.1	191.0

Further samples indicate increased levels of mercury within the Troy Chemical Co. Plant and downstream of that plant.

QA/QC: None reported.

File Location: Division of Hazardous Site Mitigation Central Files.

4. Sampling Date: July, 1980

Sampled By: NJDEP, Abandoned Sites Group, Solid Waste Administration.

Samples: 20 soil boring samples analyzed for volatile organic compounds, mercury, pesticides, and heavy metals.



Environmental Solutions through Technology

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Windsor, CT 06095
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October 30, 1992

Mr. Anil Singh
Site Manager
New Jersey Department of
Environmental Protection and Energy
401 East State Street, 6th Floor
Trenton, NJ 08625

RE: Final Feasibility Study
Albert Steel Drum/Prentiss Drug and Chemical (ASD/PDC) Site
NJDEPE Contract No. S-87011
TRC Project No. 9948-N81-50

Dear Mr. Singh:

Enclosed please find fourteen (14) bound and one unbound copy of the final Feasibility Study (FS) completed for the above referenced site. The enclosed FS has been revised consistent with written comments of October 20, 1992 (Anne Hayton) and October 15, 1992 (Caren Kline) and in accordance with our discussions.

If you have any questions or comments please contact me. We appreciate the opportunity to continue to assist the NJDEPE at the ASD/PDC site. Thank you for your continued cooperation.

Very Truly Yours,

TRC ENVIRONMENTAL CORPORATION

Robert C. Smith, P.E.
Project Manager

c: T. Cozzi, BSM - NJDEPE
A. Hayton, BEERA/EES - NJDEPE
C. Kline, BGWFA - NJDEPE
S. Farrick, TRC, Windsor
J. Oliva, TRC, Windsor
J. Peronto, TRC, Windsor

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the near future. Therefore, restoration of the site with respect to radioactive materials is not addressed in this Feasibility Study.

For surface soils, a summary of specific surface soil contaminants and the number of samples which exceed the proposed NJDEPE surface soil cleanup levels for each contaminant are presented in Table 3-1.

Subsurface Soil

The proposed total VOC concentration standard of 1,000 ppm and total organic concentration standard of 10,000 ppm were used, along with the NJDEPE site-specific dioxin cleanup level of 20 ppb, and an action level of 5 picoCuries per gram for uranium and thorium, as the basis for the subsurface soil quality evaluation. Each of these contaminant group standards is discussed below with respect to subsurface soil contaminant levels.

Test pit sample TP-4C and a tank sample from test pit TP-10A, located in the central and southeast portions of the site, respectively, exceeded both the proposed 1,000 ppm total VOC soil standard and the proposed total organic soil standard of 10,000 ppm. In addition, soil samples from borings B-51 and B-52, located in the northwestern portion of the salvage yard, exceeded the proposed total VOC standard of 1,000 ppm. Samples from these two borings were collected from soil near the water table. The sampling locations having subsurface soil VOC concentrations greater than 1,000 ppm are shown on Figure 3-7.

Site-specific cleanup levels for subsurface pesticides were developed by NJDEPE for the ASD/PDC site to provide protection of ground water. The site-specific levels include: chlordane at 50 ppm; alpha-BHC at 50 ppm; and beta-BHC at 50 ppm. None of the Phase I or Phase II subsurface soil samples exceeded these pesticide limits.

Inorganic constituents detected in subsurface soils were compared in the Phase II RI to both typical and background metal levels listed in Table 3-2. This method of evaluation was used in the RI based on the lack of natural "background" soil on-site. Metal concentrations were considered herein to be significantly elevated if the detected concentration was at least two orders of magnitude greater than the background or typical values presented in the table. Using this criteria, arsenic, copper, lead, manganese, mercury, and zinc were considered elevated in

subsurface soil samples. The locations of subsurface soil samples with elevated metal concentrations are shown on Figure 3-8.

In regard to dioxin, only a single subsurface soil sample (TB-11) exceeded the site-specific 20 ppb dioxin cleanup level. A duplicate sample collected from this location indicated 2.7 ppb dioxin. The location and depth of the dioxin exceedance (22.9 ppb) is shown in Figure 3-21.

None of the Phase I or Phase II subsurface soil samples exceeded the radiation soil action levels for thorium or uranium.

Table 3-3 lists the maximum concentration of contaminants exhibited in subsurface soil samples. Table 3-4 lists contaminants detected in site test pits. Based on this information, the remedial action objectives for soils are as follows:

- Minimize exposure to surficial soil contaminants, and
- Minimize migration of subsurface contaminants into ground water.

3.1.2 Ground Water

In evaluating ground water, the proposed individual organic ground water cleanup standard of 1 ppm and proposed total organic cleanup standard of 10 ppm are used. Dioxin was not detected in any site ground water samples. An area in which ground water contaminant levels exceed the proposed individual organic (1 ppm) and total organic (10 ppm) standards is located in the southern portion of the site, in the area of monitoring wells MW-4D, MW-5S, MW-5I, MW-5R, and MW-13S, as indicated in Figure 3-9. Organic contaminants detected in ground water samples from these wells at levels exceeding the 1 ppm standard include bis(2-chloroethyl)ether, chlorobenzene, ethylbenzene, toluene, trichloroethene, and total xylenes. The total organic standard of 10 ppm was exceeded in shallow wells MW-5S and MW-13S and in intermediate well MW-5I.

In regard to inorganics, concentrations of inorganic compounds exhibited in well MW-11S were used as "background" levels for purposes of comparison to levels detected in other wells. Elevated levels of arsenic, barium, chromium, and lead were detected in unfiltered ground water samples collected from wells screened in the shallow ground water aquifer. Figure

3-10 shows that elevated levels of inorganic compounds were present in samples from most of the shallow wells, with the exception of wells in the northern portion of the site bordering on Wilson Avenue. In the intermediate wells, elevated concentrations of arsenic and lead were present in samples collected from wells MW-10I and MW-1I in the northwest corner of the site. Also, an elevated concentration of mercury was exhibited in the sample from intermediate well MW-5I in the southern portion of the site, as indicated in Figure 3-10.

A summary of specific contaminants detected in ground water samples, including those detected at concentrations which exceed current ARARs/TBCs, is presented in Table 3-5 along with the maximum concentrations detected.

Based on this information and the reported non-use of area ground water for potable purposes, the remedial action objective for ground water is:

- Prevent continued migration of organic compounds detected at levels exceeding action levels in site ground water.

3.1.3 Surface Water

In the evaluation of surface water contamination, the New Jersey Surface Water Quality Standards were considered as TBCs. These standards are provided in Table 3-6. The surface water classification at the ASD/PDC site is FW-2 NT (non-trout) or SE-3. Areas of surface water contamination are present at the three surface water sampling locations on-site; namely, in the standing water in the concrete-lined drainage channel (south-central portion of the site) in the small pond near the metal grate and concrete foundations (central portion of the site) and in an area of standing water (southern portion of the site).

A summary of contaminants detected in surface water samples and those specific surface water contaminants which exceed surface water quality criteria are presented in Table 3-7. The locations at which volatile organic constituents (benzene, chloroform, carbon tetrachloride, 1,2-dichloroethane, methylene chloride, tetrachloroethene, trichloroethene, and vinyl chloride) were detected at levels exceeding these standards are shown on Figure 3-11.

Bis(2-ethylhexyl)phthalate was the only semi-volatile organic compound detected at concentrations exceeding ambient water quality standards, specifically at sample locations SW-1, SW-7, SW-3 and SW-9 as shown on Figure 3-12.

Pesticides, including beta-BHC, dieldrin and total chlordane, as well as PCBs were detected in surface water samples at levels exceeding NJDEPE ambient surface water quality criteria at the locations shown on Figure 3-13.

Concentrations of aluminum, arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, zinc, and cyanide were present in on-site surface water samples at concentrations that exceeded ambient water quality standards. Select metals and their detected concentrations are shown on Figure 3-14.

Based on this information, the remedial action objectives for surface water are as follows:

- Prevent exposures to contaminants in the surface waters, and
- Prevent migration of contaminants off-site.

3.1.4 Sediment

The NJDEPE March 1991 Draft Guidance for Sediment Evaluations was used to evaluate on-site sediment contamination. This document proposes the evaluation of sediment quality by applying an equilibrium partitioning approach developed by the EPA to select organic contaminants (Sediment Quality Criteria) and by applying criteria developed by NOAA for inorganics and certain pesticides and PAHs (Effects Range-Median (ER-M) Values). Contaminants detected in sediment samples included VOCs, SVOCs, pesticides/ PCBs, inorganics and dioxin. Areas of concern exist at each of the three surface water features on-site: the concrete-lined drainage channel, the "small pond" (central portion of the site) and the "area of standing water" (southern portion of the site).

No sediment quality standards exist for volatile organic contaminants. Thus, the concentrations of VOCs in sediment samples were compared to the NJDEPE soil cleanup standard of 1,000 ppm total VOCs. Using this criterion, only one on-site sediment sample, SD-1, exceeded the total VOC concentration of 1,000 ppm with a concentration of 8,178 ppm as shown in Figure 3-15.

In regard to SVOCs, twelve Phase I and Phase II samples exceeded the Sediment Quality Criteria for phenanthrene. Numerous SVOCs exceeded ER-M values as shown on Table 3-8 and in Figure 3-16. In addition, a drain sediment sample (DS-1) collected from a small

Final Decision Document

Albert Steel Drum/Prentiss Drug and Chemical Site

Newark City, Essex County

I. Purpose Of Final Decision Document

This Final Decision Document describes the remedial alternatives considered for the Albert Steel Drum/Prentiss Drug and Chemical Site (ASD/PDC, i.e. "the site") and identifies the selected remedial alternative along with the rationale for this selection. The selected remedial alternative includes components of media-specific alternatives developed for remediation of site soil, sediment, and the former PDC building and tanks. Remediation of site ground water has been deferred pending an evaluation of upgradient ground water conditions. The Final Decision Document has been developed by the New Jersey Department of Environmental Protection (NJDEP) in accordance with the New Jersey Technical Requirements for Site Remediation, Spill Compensation and Control Act, the New Jersey Solid Waste Management Act, and to the extent practicable, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, and the revised National Oil and Hazardous Substances Pollution Contingency Plan of 1990 ("NCP"). While the ASD/PDC site is not a CERCLA listed site, the site investigation, development of remedial alternatives, and remedy selection process have been conducted in general accordance with requirements of CERCLA and the NCP. The alternatives summarized here are described in the Remedial Investigation (RI) and Feasibility Study (FS) reports, which should be consulted for a more thorough description of site conditions and alternatives. The RI and FS for this site predate the adoption of the Industrial Site Recovery Act, P.L. 1993, c.139, (S1070), and the Technical Requirements for Site Remediation (N.J.A.C. 7:26E). Therefore the format for the RI and FS, including the remedy selection process, is consistent with the NCP and not N.J.A.C. 7:26E. However this Final Decision Document does meet the minimum standards of N.J.A.C. 7:26E.

The remedy described in this Final Decision Document is the final remedy for the site.

II. Community Role in the Selection Process

NJDEP relies on public input to ensure that the concerns of the community are considered in selecting an effective remedy for the site. To this end, the RI reports, FS report, the Draft Decision Document, and supporting documentation have been made available to the public for a public comment period which began on March 7, 1994 and concluded on April 5, 1994.

A public meeting was held during the public comment period at the Newark City Hall on March 15, 1994 at 7:00 pm. The purpose of this meeting was to present the conclusions of the RI and FS reports, elaborate further on the reasons for recommending the preferred remedial alternative(s), and to receive public comments.

Comments received at the public meeting, as well as written comments, have been recorded in the Responsiveness Summary section of this Final Decision Document which formalizes NJDEP's selection of the remedy.

Copies of the RI and FS reports, Draft Decision Document, and supporting documentation are available at the following four locations:

New Jersey Department of Environmental Protection
401 East State Street, CN 413
Trenton, New Jersey 08625-0413
Phone (609) 984-3081
Contact: Ms. Mindy Mumford

Newark City Hall
Clerk's Office
920 Broad Street
Newark, N.J. 07102
Phone (201) 733-3834
Contact: Mr. Robert P. Marasco

New Jersey Department of Environmental Protection
Site Remediation Program
(609) 984-3081 • Bureau of Community Relations



TABLE 1
CONTAMINANTS DETECTED ABOVE CLEANUP CRITERIA IN SURFACE SOIL
ALBERT STEEL DRUM/PRENTISS DRUG AND CHEMICAL

Page 1 of 1

Parameter	NJDEPE Cleanup Criteria ¹	Maximum Concentration	Location of Max. Concentration	# Samples Exceeding Standard ⁵
<u>Volatile Organic Compounds (ppb)</u>				
No VOCs Exceeded Standards in Surface Soil Samples				
<u>Semi-Volatile Organic Compounds (ppb)</u>				
Benzo(a)anthracene	4,000	32,000	B14-2	14/51
Benzo(a)pyrene	660	26,000	B35-2	40/51
Benzo(b)fluoranthene	4,000	60,000	B35-2	17/51
Benzo(g,h,i)perylene	2,500	21,000	B63-1	10/51
Benzo(k)fluoranthene	4,000	60,000	B35-2	17/51
Bis(2-ethylhexyl) phthalate	210,000	280,000	B55-1	1/51
Dibenzo(a,h)anthracene	660	17,000	SS-2	11/51
Ideno(1,2,3-cd)pyrene	4,000	21,000	B63-1	6/51
<u>Pesticides/PCBs/Dioxin (ppb)</u>				
alpha-BHC ²	460	570	B42-1	1/51
beta-BHC ²	1,600	4,200	B42-1	2/51
Heptachlor	650	18,000	B11-1	1/51
Aldrin	170	35,000	B11-1	4/51
Dieldrin	180	56,000	B33-1	15/51
4,4-DDD	12,000	140,000	M1-1	1/51
4,4-DDT	9,000	300,000	B1-1	4/51
PCBs(total)	2,000	81,000	B33-1	27/81
Dioxin ³	20	126.8	B5-1	4/
<u>Inorganics (ppm)</u>				
Arsenic	2	222	M14S-1	71/75
Beryllium	1	1.4	SS-16	2/75
Cadmium	100	2,360	B33-1	3/76
Chromium ⁴	500	1,760	B13-1	3/75
Copper	600	3,100	B33-1	7/75
Lead	600	6,160	B31-1	37/75
Mercury	270	868	B13-1	2/75
Thallium	2	92	B16-1	1/75

NOTES:

1. NJDEPE Proposed Soil Cleanup Criteria (February 3, 1993)
2. NJDEPE Proposed Non-Residential Surface Soil Action Levels, 7-1-92 Letter
3. Dioxin results reported in 2,3,7,8-TCDD equivalents. One out of 14 surface soil samples exceeded the 20 ppb limit from Phase II sampling, the other three samples (total of four) which exceeded the 20 ppb limit were collected in Phase I. The 20 ppb limit was established in a September 23, 1992 memorandum from Ms. Anne Hayton, Technical Coordinator to Mr. Anil Singh, Site Manager at NJDEPE.
4. NJDEPE Proposed Action Level, 8-27-92 Comments on Phase II RI Report
5. X/X The first number indicates the number of samples exceeding the standard, the second number indicates the total number of samples.

TABLE 2
CONTAMINANTS DETECTED ABOVE SEDIMENT QUALITY SCREENING CRITERIA
ALBERT STEEL DRUM/PRENTISS DRUG & CHEMICAL

Page 1 of 1

Parameter	Sediment Quality Criteria (2) and ER-M Values (1)	Maximum Concentration	Location of Max. Concentration	# Samples Exceeding Standard
<u>Volatile Organic Compounds (ppb)</u>				
No VOCs Exceeded Cleanup Standards In Sediment.				
<u>Semi-Volatile Organic Compounds (ppb)</u>				
Naphthalene	2,100 ¹	59,000	SD15-1	8 (4)
2-Methyl Naphthalene	670 ¹	79,000	SD15-1	9 (4)
Acenaphthene	650 ¹ , 180 ²	11,000	SD11-2	4 (3)
Phenanthrene	1380 ¹ , 32.6 ²	130,000	SD11-2	14 (4)
Anthracene	960 ¹	29,000	SD11-2	8 (3)
Fluoranthene	3,600 ¹	320,000	SD11-2	10 (2)
Pyrene	2,200 ¹	150,000	SD11-2	13 (3)
Benzo(a)Anthracene	1,600 ¹	100,000	SD11-2	8 (0)
Chrysene	2,800 ¹	98,000	SD11-2	9 (2)
Benzo(a)pyrene	2,500 ¹	73,000	SD11-2	6 (0)
Dibenz(a,h)anthracene	260 ¹	14,000	SD11-2	4 (0)
<u>Pesticides/PCBs (ppb)</u>				
Dieldrin	0.00976 ²	29,000	SD9-1	5 (2)
Endrin	0.00654 ²	690	SD11-2	1 (0)
4,4-DDT	0.183 ²	18,000	SD-3	5 (0)
Chlordane (total)	6 ¹	9,700	SS-4	13 (4)
<u>Inorganics (ppm)</u>				
Antimony	25 ¹	31.6	SD9-1	3
Arsenic	85 ¹	2,560	SD11-1	12 (4)
Cadmium	9 ¹	589	SD15-1	13 (3)
Chromium	145 ¹	636	SD15-1	9 (3)
Copper	390 ¹	1,460	SS-6	11 (2)
Lead	110 ¹	11,038	SD14-2	16 (3)
Mercury	1.3 ¹	1,580	SD-2	16 (2)
Nickel	50 ¹	198	SD15-1	9 (2)
Silver	2.2 ¹	175	SS-6	13 (3)
Zinc	270 ¹	3,990	SS-6	9 (3)

NOTES

1. EPA 1989(c) Briefing Report to the EPA Science Advisory Board on the Equilibrium Partitioning Approach to Generating Sediment Quality Criteria. Criteria and Standards Division. EPA/5-89-002.
2. NOAA, 1990. The Potential for Biological Effects of Sediment-sorbed Contaminants Tested in the National Status and Trends Program. NOAA Technical Memorandum NOS OMA 52.
3. (x) Indicates the number of off-site samples exceeding standards.

TABLE 3
CONTAMINANTS DETECTED ABOVE CLEANUP CRITERIA IN SURFACE WATER
ALBERT STEEL DRUM/PRENTISS DRUG AND CHEMICAL

Page 1 of 1

Parameter	NJDEPE Surface Water Quality Criteria	Maximum Concentration	Location of Max Concentration	# Samples Exceeding Standard
<u>Volatile Organic Compounds (ppb)</u>				
Vinyl Chloride	0.0830	16	SW-16(1)	2 (1)
Methylene Chloride	2.49	37	SW1	4 (2)
Chloroform	5.67	82	SW1	3 (0)
1,2-Dichloroethane	0.291	12	SW1	1 (0)
Carbon Tetrachloride	0.363	4	SW1	1 (0)
Trichloroethene	1.09	540	SW1	3 (0)
Benzene	0.150	10	SW-9	4 (0)
Tetrachloroethene	0.388	170	SW1	3 (0)
<u>Semi-Volatile Organic Compounds (ppb)</u>				
bis(2-Ethylhexyl) Phthalate	1.76	150	SW-15	6 (1)
<u>Pesticides/PCBs (ppb)</u>				
beta-BHC	0.137	0.17	SW3	1 (0)
Dieldrin	0.000135	0.48	SW-7, SW-15	3 (2)
alpha-Chlordane	0.000277	0.065	SW-7	1 (0)
gamma-Chlordane	0.000277	0.086	SW-7	1 (0)
Aroclor - 1254	0.000244	4.0	SW-15	5 (2)
<u>Inorganics (ppm)</u>				
Aluminum	87	2,150	SW-9	9 (2)
Arsenic	190	3,600	SW-14	2 (2)
Cadmium	0.905	378	SW-7	5 (1)
Chromium	11	15.1	SW-7	3 (0)
Copper	9.25	218	SW1	9 (2)
Iron	1000	14,700	SW1	7 (2)
Lead	2.2	307	SW-9	9 (2)
Manganese	100	1,290	SW-7	7 (2)
Mercury	0.012	37.6	SW-14	9 (2)
Zinc	83.1	654	SW-9	8 (1)
Cyanide	5.2	13.9	SW-9	1 (0)

Notes:

1. () Indicates the number of off-site samples exceeding standards.

TABLE 3-6
NEW JERSEY SURFACE WATER QUALITY CRITERIA

	Acute(a)	Chronic(c)	Noncarcinogen(h)	Carcinogen(hc)	Possible Carcinogen(hcc)
<u>Pesticides/PCBs</u>					
beta-BHC	-	-	-	-	0.137
Dieldrin	2.5	0.0019	-	0.000135	-
Chlordane (total)	2.4	0.0043	-	0.000277	-
PCBs	-	0.014	-	0.000244	-
<u>Base Neutrals/Acid Extractables</u>					
Phenol	-	-	20900	-	-
1,4-Dichlorobenzene	-	-	343	-	-
1,2-Dichlorobenzene	-	-	2520	-	-
bis(2-Chloroisopropyl) ether	-	-	1250	-	-
1,2,4-Trichlorobenzene	-	-	30.6	-	-
Diethyl Phthalate	-	-	21200	-	-
Fluorene	-	-	1340	-	-
Pentachlorophenol(1)	9.07	5.73	-	0.282	-
Phenanthrene	-	-	-	0.0028	-
di-n-Butyl Phthalate	-	-	3530	-	-
bis(2-Ethylhexyl) Phthalate	-	-	-	1.76	-
<u>Volatile Organics</u>					
Vinyl Chloride	-	-	-	0.0830	-
Methylene Chloride	-	-	-	2.49	-
trans 1,2-Dichloroethene	-	-	592	-	-
Chloroform	-	-	-	5.67	-
1,2-Dichloroethane	-	-	-	0.291	-
1,1,1-Trichloroethane	-	-	127	-	-
Carbon Tetrachloride	-	-	-	0.363	-
Trichloroethene	-	-	-	1.09	-
Benzene	-	-	-	0.150	-
Tetrachloroethene	-	-	-	0.388	-
Toluene	-	-	7440	-	-
Chlorobenzene	-	-	22	-	-
Ethyl Benzene	-	-	3030	-	-
<u>Inorganics</u>					
Aluminum	750	87	-	-	-
Arsenic	360	190	-	0.017	-
Barium	-	-	2000	-	-
Cadmium(2)	2.84	0.905	15.9	-	-
Chromium	16	11	160	-	-
Copper(2)	13.52	9.25	-	-	-
Iron	-	1000	-	-	-
Lead(2)	56.6	2.2	5	-	-
Manganese	-	-	100	-	-
Mercury	2.4	0.012	0.144	-	-
Nickel(2)	1112	123.6	516	-	-
Selenium	20	5	179	-	-
Zinc(2)	91.7	83.1	-	-	-
Cyanide	22	5.2	768	-	-

- (1) = Criteria Dependent on pH. For This Report a Value of pH=7 Was Assumed.
 (2) = Value Dependent on Hardness. For This Report a Value of Hardness=125mg/l Was Assumed.
 '-' = No Criteria Exists
- a = Limit Represents Acute Aquatic Life Protection as a One-Hour Average
 c = Limit Represents Chronic Aquatic Life Protection as a Four-Day Average
 h = Limit Represents Noncarcinogenic Effect-Based Human Health Criteria as a 30-Day Average with no Frequency of Exceedence at or above the Design Flow
 hc = Limit represents Carcinogenic Effects-Based Human Health Criteria as a 70-Year Average with no Frequency of Exceedence at or above the Design Flow and Are Based on a Risk Level of One-in-One-Million
 hcc = Limit Represents Toxic Substances Considered To Be Possible Human Carcinogens for which There Is Insufficient Data To Develop Criteria on Systemic Effects and Are Based on a Risk level of One-in-One-Hundred-Thousand

TABLE 3-7
CONTAMINANTS DETECTED IN SURFACE WATER
ALBERT STEEL DRUM/PRENTISS DRUG AND CHEMICAL
Page 2 of 2

Parameter	NJDEPE Surface Water Quality Criteria	Maximum Concentration	Location of Max. Concentration	# Samples Exceeding Standard
<u>Pesticides/PCBs (ppb)</u>				
beta-BHC	0.137	0.17	SW3	1 (0)
Dieldrin	0.000135	0.48	SW-7, SW-15	3 (2)
alpha-Chlordane	0.000277	0.065	SW-7	1 (0)
gamma-Chlordane	0.000277	0.086	SW-7	1 (0)
Aroclor - 1254	0.000244	4.0	SW-15	5 (2)
<u>Inorganics (ppm)</u>				
Aluminum	87	2,150	SW-9	9 (2)
Arsenic	190	3,600	SW-14	2 (2)
Barium	2000	500	SW-7	-
Cadmium	0.905	378	SW-7	5 (1)
Calcium	-	624,000	SW-15	-
Chromium	11	15.1	SW-7	3 (0)
Cobalt	-	32	SW1	-
Copper	9.25	218	SW1	9 (2)
Iron	1000	14,700	SW1	7 (2)
Lead	2.2	307	SW-9	9 (2)
Magnesium	-	18,400	SW-14	-
Manganese	100	1,290	SW-7	7 (2)
Mercury	0.012	37.6	SW-14	9 (2)
Nickel	123.6	50	SW1	-
Potassium	-	19,900	SW-14	-
Selenium	5	1.3	SW-9	-
Sodium	-	55,300	SW-14	-
Vanadium	-	14.4	SW-9	-
Zinc	83.1	654	SW-9	8 (1)
Cyanide	5.2	13.9	SW-9	1 (0)

() - Indicates the number of off-site samples exceeding standards

TABLE 3-8
CONTAMINANTS DETECTED IN SEDIMENT AT ALBERT STEEL DRUM
ALBERT STEEL DRUM/PRENTISS DRUG & CHEMICAL
Page 2 of 2

Parameter	NJDEPE Sediment Quality Criteria/ ER-M Values	Maximum Concentration	Location of Max. Concentration	# Samples Exceeding Standard
Pesticides/PCBs (ppb)				
alpha-BHC	-	110	SD11-1	-
Aldrin	-	11,000	SD7-1	-
Dieldrin	0.00976 ²	29,000	SD9-1	5 (2)
4,4-DDE	-	1,900	SD-3	-
Endrin	0.00654 ²	690	SD11-2	1 (0)
4,4-DDD	-	160,000	SD14-1	-
4,4-DDT	0.183 ²	18,000	SD-3	5 (0)
alpha-Chlordane	-	5,500	SD9-1	-
gamma-Chlordane	-	7,800	SD9-1	-
Chlordane (total)	6 ¹	9,700	SS-4	13 (4)
PCBs (total)	-	241,000	SD9-1	-
Inorganics (ppm)				
Aluminum	-	14,300	SS-6	-
Antimony	25 ¹	31.6	SD9-1	3
Arsenic	85 ¹	2,560	SD11-1	12 (4)
Barium	-	2,390	SD15-1	-
Beryllium	-	2	SD14-2	-
Cadmium	9 ¹	589	SD15-1	13 (3)
Calcium	-	38,000	SD15-1	-
Chromium	145 ¹	636	SD15-1	9 (3)
Cobalt	-	527	SD15-1	-
Copper	390 ¹	1,460	SS-6	11 (2)
Iron	-	45,500	SD15-1	-
Lead	110 ¹	11,038	SD14-2	16 (3)
Magnesium	-	9,220	SD11-2	-
Manganese	-	1,460	SD10-2	-
Mercury	1.3 ¹	1,580	SD-2	16 (2)
Nickel	50 ¹	198	SD15-1	9 (2)
Potassium	-	934	SD10-2	-
Selenium	-	4.7	SD9-1	-
Silver	2.2 ¹	175	SS-6	13 (3)
Sodium	-	4,590	SS-6	-
Vanadium	-	82	SS-6	-
Zinc	270 ¹	3,890	SS-6	9 (3)
Cyanide	-	46	SS-6	-

NOTES

- 1 Effects Range-Median (ER-M) values taken from the NJDEPE Guidance for Sediment Quality Evaluations
 - 2 Sediment Quality Criteria taken from the NJDEPE Guidance for Sediment Quality Evaluations. Actual Sediment Quality Criteria values are based on Total Organic Carbon content for each individual sample. Refer to Albert Steel Drum/Prentiss Drug & Chemical RI Report for specific criteria values.
- () - Indicates the number of off-site samples exceeding standards

TABLE 3-16, CONTINUED
SUMMARY OF SEDIMENT ANALYSES RESULTS EXCEEDING
NOAA EFFECTS RANGE-MEDIAN VALUES*

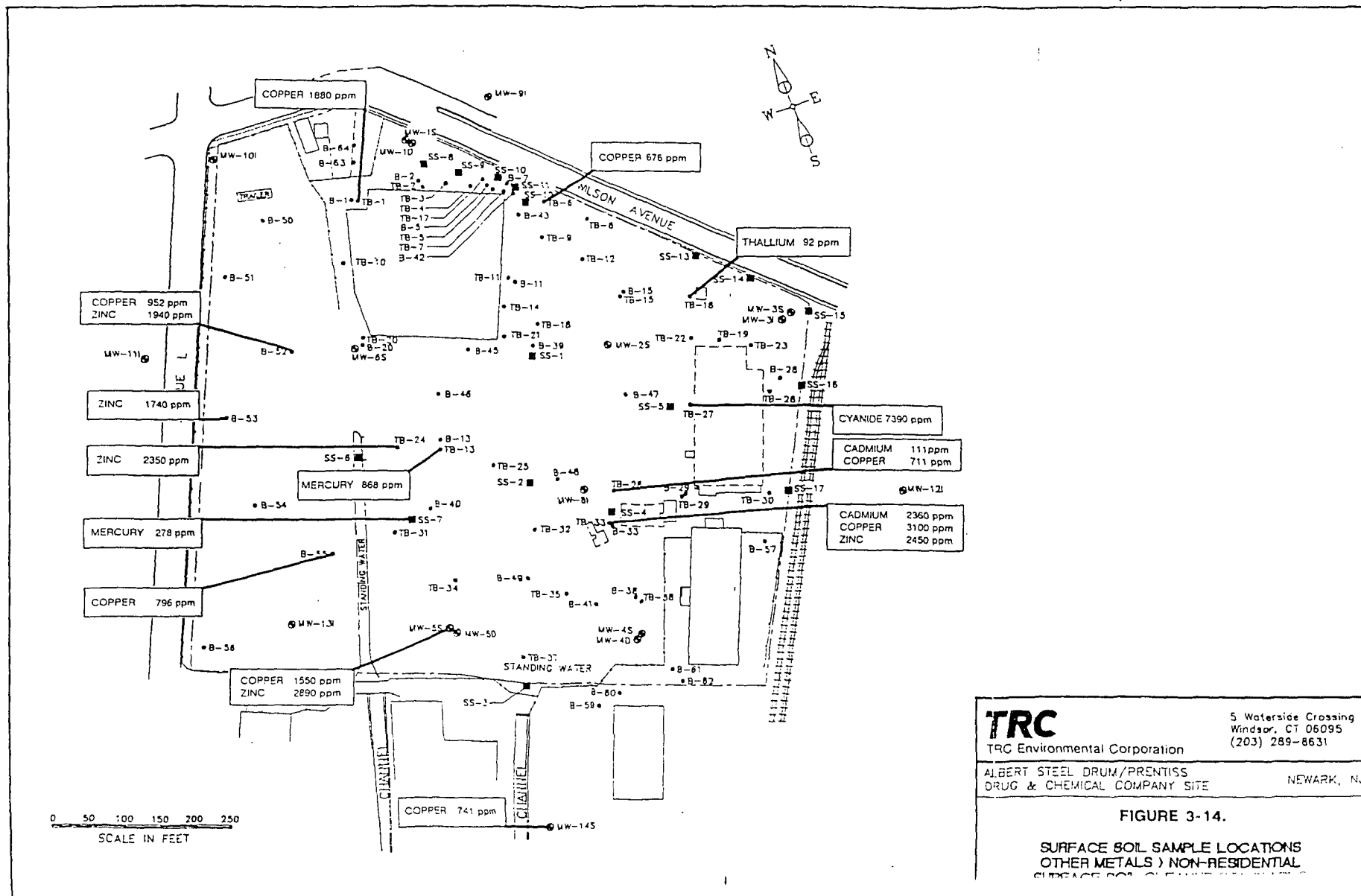
Contaminant	Sample Number	Phase	Concentration	ER-M Concentration
MERCURY	SD11-2	II	612	1.3
	SD14-2	II	11000	
	SD15-1	II	3980	
	SD15-2	II	1180	
	SD1	I	141	
	SD2	I	1520	
	SD4(2)	I	1500	
	SD3	I	1610	
	SS-4	I	579	
	SS-6	I	2510	
	SD7-1	II	133	
	SD7-2	II	121	
	SD8-1	II	64	
	SD8-2	II	2.59	
	SD9-3(1)	II	17	
	SD10-1	II	45.2	
	SD10-2	II	7.7	
	SD11-1	II	65.5	
	SD11-2	II	49.6	
	SD15-1	II	286	
	SD15-2	II	286	
	SD2	I	1570	
	SD4(2)	I	1580	
	SD3	I	5.1	
	SS-4	I	2.2	
	SS-6	I	23	
NICKEL	SD7-1	II	103	50
	SD7-2	II	65.2	
	SD8-1	II	50.3	
	SD9-3(1)	II	56.6	
	SD14-2	II	66	
	SD15-1	II	198	
	SD2	I	119	
	SD4(2)	I	105	
SILVER	SS-4	I	67	2.2
	SD7-1	II	8	
	SD7-2	II	4	
	SD8-1	II	11.8	
	SD9-3(1)	II	45.5	
	SD10-1	II	5.4	
	SD11-1	II	4.7	
	SD11-2	II	6	
	SD14-2	II	11.7	
	SD15-1	II	61	
	SD15-2	II	11.4	
	SD2	I	33	
ZINC	SD4(2)	I	29	270
	SD3	I	26	
	SD7-1	II	926	
	SD7-2	II	710	
	SD8-1	II	764	
	SD9-3(1)	II	1590	
	SD10-2	II	303	
	SD11-1	II	724	
	SD11-2	II	2440	
	SD14-2	II	1370	
	SD15-1	II	3530	

CONTAMINANTS DETECTED IN SURFACE SOIL
ALBERT STEEL DRUM/PRENTISS DRUG AND CHEMICAL
Page 2 of 2

Parameter	NJDEPE Cleanup Standard ¹	Maximum Concentration	Location of Max. Concentration	# Samples Exceeding Standard
Pesticides/PCBs (ppb)				
alpha-BHC ²	460	570	B42-1	1 (0)
beta-BHC ²	1,600	4,200	B42-1	2 (0)
delta-BHC	-	160	B42-1	-
gamma-BHC(Lindane)	2,200	120	B21-1	-
Heptachlor	650	18,000	B11-1	1 (0)
Aldrin	170	35,000	B11-1	4 (0)
Heptachlor Epoxide	-	340	M11	-
Dieldrin	180	56,000	B33-1	15 (0)
4,4-DDE	9,000	6,600	B1-1	-
Endrin	310,000	5,900	B4-1	-
4,4-DDD	12,000	14,000	M1-1	1 (0)
4,4-DDT	9,000	300,000	B1-1	4 (0)
Methoxychlor	5,200,000	42,000	B7-1	-
Endrin Ketone	-	320	B63-1	-
alpha-Chlordane	-	1,100	B5-1	-
gamma-Chlordane	-	1,700	B5-1	-
Chlordane(total) ²	2,200	78,000	B33-1	21 (0)
PCBs(total)	2,000	81,000	B33-1	23 (1)
Inorganics (ppm)				
Aluminum	-	23,300	M51	-
Antimony	340	61.4	B55-1	-
Arsenic	20	222	M14S-1	19 (0)
Barium	26,000	4,160	B33-1	-
Beryllium	2	1.5	M14S-1	-
Bismuth	100	2,360	B33-1	2 (0)
Calcium	-	63,300	B43-1	-
Chromium ³	500	1,760	B13-1	3
Cobalt	-	432	B56-1	-
Copper	600	3,100	B33-1	8 (1)
Iron	-	223,000	B16-1	-
Lead	600	6,160	B31-1	33 (1)
Magnesium	-	10,300	M14S-1	-
Manganese	-	2,020	B33-1	-
Mercury	260	868	B13-1	2 (0)
Nickel	2,400	1,130	M31	-
Potassium	-	1,660	SS-16, B63-1	-
Selenium	1,000	3.4	B53-1	-
Silver	2,000	90	B24-1	-
Sodium	-	2,720	M51	-
Thallium	2	92	B16-1	1 (0)
Vanadium	7,000	455	B13-1	-
Zinc	1,500	2,890	M5-1	5 (0)
Cyanide	5,200	7,390	B27-1	1 (0)

NOTES:

- 1 NJDEPE Proposed Non-Residential Surface Soil Action Levels
 - 2 NJDEPE Proposed Non-Residential Surface Soil Action Levels, 7-1-92 Letter
 - 3 NJDEPE Proposed Action Level, 8-27-92 Comments on Phase II RI Report
- () - Indicates number of off-site surface soil samples exceeding standards



TRC

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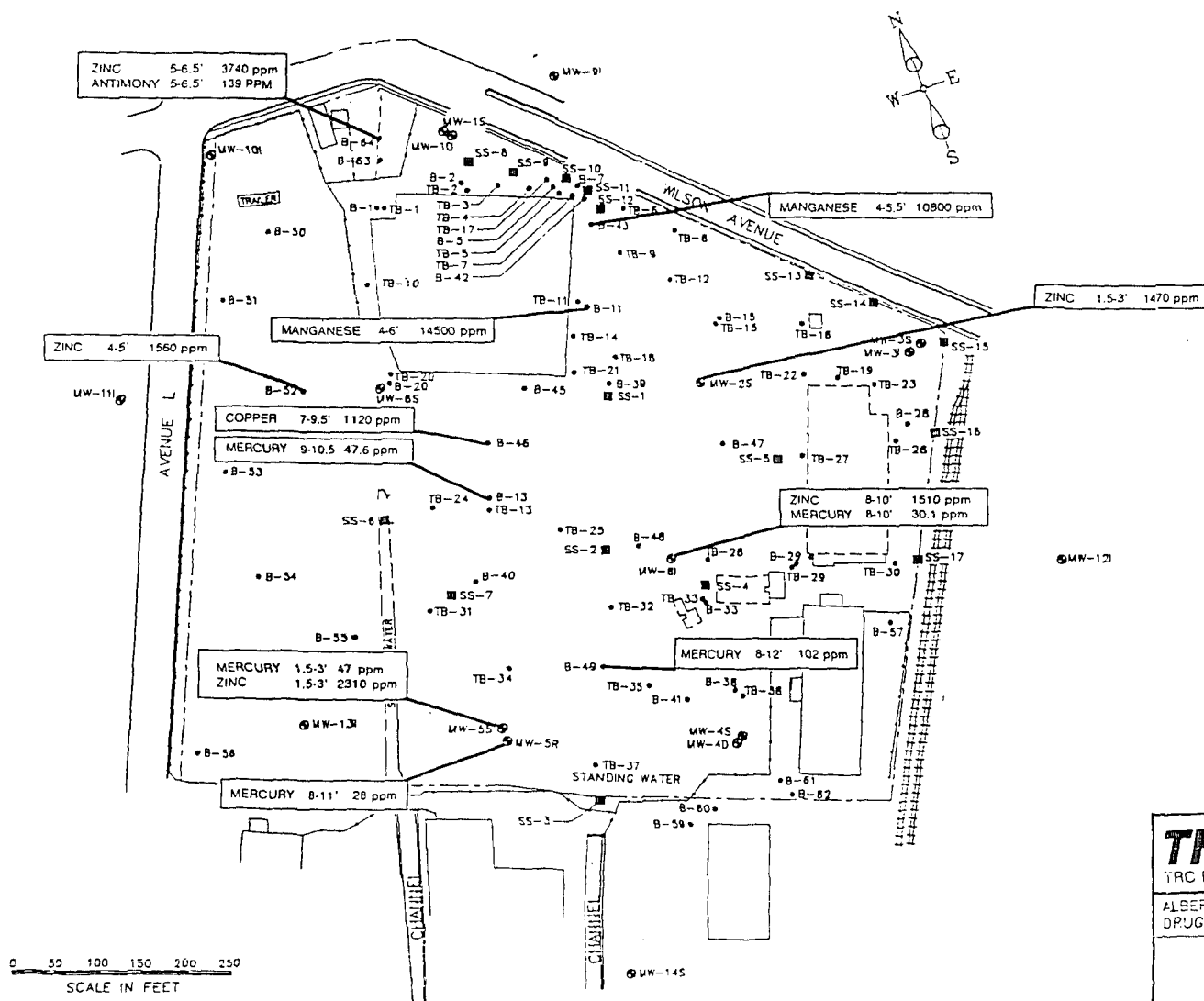
ALBERT STEEL DRUM/PRENTISS
DRUG & CHEMICAL COMPANY SITE

5 Waterside Crossing
Windsor, CT 06095
(203) 289-6631

NEWARK, NJ

FIGURE 3-14.

SURFACE SOIL SAMPLE LOCATIONS
OTHER METALS > NON-RESIDENTIAL
SURFACE SOIL SAMPLE LOCATIONS



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 DRUG & CHEMICAL COMPANY SITE
 NEWARK, NJ

FIGURE 3-15.
 SUBSURFACE SOIL SAMPLE LOCATIONS
 ELEVATED METALS CONCENTRATIONS

TABLE 3-16, CONTINUED
SUMMARY OF SEDIMENT ANALYSES RESULTS EXCEEDING
NOAA EFFECTS RANGE-MEDIAN VALUES*

Contaminant	Sample Number	Phase	Concentration	ER-M Concentration
	SD11-2	II	612	
	SD14-2	II	11000	
	SD15-1	II	3980	
	SD15-2	II	1190	
	SD1	I	141	
	SD2	I	1520	
	SD4(2)	I	1500	
	SD3	I	1610	
	SS-4	I	579	
	SS-6	I	2510	
MERCURY	SD7-1	II	133	1.3
	SD7-2	II	121	
	SD8-1	II	64	
	SD8-2	II	2.59	
	SD9-3(1)	II	17	
	SD10-1	II	45.2	
	SD10-2	II	7.7	
	SD11-1	II	65.5	
	SD11-2	II	49.6	
	SD15-1	II	286	
	SD15-2	II	286	
	SD2	I	1570	
	SD4(2)	I	1580	
	SD3	I	5.1	
	SS-4	I	2.2	
	SS-6	I	23	
NICKEL	SD7-1	II	103	50
	SD7-2	II	65.2	
	SD8-1	II	50.3	
	SD9-3(1)	II	56.6	
	SD14-2	II	66	
	SD15-1	II	198	
	SD2	I	119	
	SD4(2)	I	105	
	SS-4	I	67	
SILVER	SD7-1	II	8	2.2
	SD7-2	II	4	
	SD8-1	II	11.8	
	SD9-3(1)	II	45.5	
	SD10-1	II	5.4	
	SD11-1	II	4.7	
	SD11-2	II	6	
	SD14-2	II	11.7	
	SD15-1	II	61	
	SD15-2	II	11.4	
	SD2	I	33	
	SD4(2)	I	29	
	SD3	I	26	
ZINC	SD7-1	II	926	270
	SD7-2	II	710	
	SD8-1	II	764	
	SD9-3(1)	II	1590	
	SD10-2	II	303	
	SD11-1	II	724	
	SD11-2	II	2440	
	SD14-2	II	1370	
	SD15-1	II	3530	

PHASE II REMEDIAL INVESTIGATION REPORT

Albert Steel Drum/Prentiss Drug and Chemical Site
Newark, New Jersey

Submitted To:

New Jersey Department of Environmental Protection and Energy

Prepared By:

TRC Environmental Corporation

March, 1993



TRC Environmental Corporation

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Appendix B - Historical Information and Aerial Photography with Analysis

Appendix C - Data Validation Summary and Master Sample Log Indices

Appendix D - Phase II Analytical Results

Appendix E - Phase I Analytical Results

Appendix F - Geophysical Investigation Techniques

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Appendix G - Site Radiation Information

Appendix H - Boring, Monitoring Well, Test Pit, Mini Test Pit,
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Appendix J - Continuous Water Level Measurements

Appendix K - Slug Test Results

Appendix L - Groundwater Contour Maps

Appendix M - New Jersey Department of Environmental Protection and
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Appendix N - Ecological Risk Assessment

Subsurface Soils:

Ninety-eight subsurface soil samples from thirty-nine borings were analyzed for inorganic compounds during Phase II. Forty-seven of these soil samples were analyzed for a select group of metals including arsenic, cadmium, lead, and mercury. The remaining subsurface soil samples were analyzed for the full TAL and cyanide.

Metals were detected in all the Phase I and Phase II subsurface soil samples. In order to evaluate the levels of the metals detected in the soils on the site, the detected concentrations were compared to the typical and background metals levels listed in Table 3-8. Under this assessment of metals in subsurface soils, a metals concentration was considered significantly elevated, or a "hotspot", if the detected concentration was at least two orders of magnitude greater than the background or typical values presented in the table. Based on this criteria, metals which were detected at elevated levels in the subsurface soil samples included arsenic, lead, mercury, copper, antimony, manganese, and zinc. The following discussion summarizes the significant metals contamination detected in the subsurface soil samples.

- Arsenic was detected at significantly elevated levels (> 100 ppm) in seven boring locations (see Figure 3-16). Four of the borings are located near the PDC building and three are located in the south central to southern corner of the site. The highest arsenic level detected in the subsurface soil was boring sample B20-3 at a concentration of 113,000 ppm. Other Phase II subsurface soil samples where elevated levels were detected included B1-4 at 744 ppm; B20-4 at 210 ppm; B38-3 at 271 ppm; B39-1 at 2040 ppm; B41-3 and B41-4 at 206 and 365 ppm, respectively; and B48-2 at 111 ppm. In three of these borings, B-1, B-39, and B-41, the elevated levels of arsenic were detected in samples from the gray silt layer which underlies the fill. There was one boring from Phase I, M-6, where elevated levels of arsenic were detected in two samples, M6-2 at 315 ppm and M6-3 at 232 ppm.
- Lead was detected at significantly elevated levels ($> 1,000$ ppm) in eight Phase I and Phase II borings (Figure 3-17). The highest subsurface soil lead concentration was detected in monitoring well boring sample M5-8 at a concentration of 3,140 ppm. The other soil samples having elevated lead levels were boring samples B2-3 at 1,500 ppm,

B7-5 at 1,070 ppm, B11-4 at 1,440 ppm, B52-2 at 1,230 ppm, B54-2 at 2,580 ppm, B64-2 at 1,670 ppm, M5S-2 at 1,160 ppm, and M11I-1 at 2,280 ppm. The majority of these samples were collected from borings located near the PDC building or in the far western portion of the site. All of these samples were collected from the fill and no elevated lead levels were observed in the silt layer immediately below. These soil samples, with the exception of the one from well boring M-5S, were collected during Phase II.

- Mercury was detected at elevated levels (>20 ppm) in five borings; four Phase II borings (B-13, B-49, M-5R, and M-8I) and one Phase I boring (M-5S) (see Figure 3-15). The highest subsurface soil mercury concentration was detected in B49-2 at 102 ppm. Mercury soil concentrations in the other borings were as follows: B13-4 at 47.6 ppm, M5S-2 at 47 ppm, M5R-5 at 28 ppm, and M8I-2 at 30.1 ppm. These borings are all located in the central to south central portion of the site. No elevated levels of mercury were observed in the subsurface soil samples collected from below the bottom of the fill.
- Zinc was detected at elevated levels ($>1,000$ ppm) at five borings, three Phase II borings (B-52, B-64, M-8I) and two Phase I borings (M-2S and M-5S) (see Figure 3-15). The highest subsurface soil zinc concentration was 3,740 ppm in sample B64-2. The other elevated subsurface soil zinc concentrations were as follows: B52-2 at 1,560 ppm, M2S-2 at 1,470 ppm, M5S-2 at 2,310 ppm, and M8I-2 at 1,510 ppm. These samples were collected from borings located throughout the site. No elevated levels of zinc were observed below the fill layer.
- Four other subsurface soil samples exhibited elevated levels of three other metals, copper ($>1,000$ ppm), antimony (>100 ppm), and manganese ($>10,000$ ppm) (see Figure 3-15). An elevated level of copper (1,120 ppm) was detected in soil sample B46-3 from a boring located south of the PDC building. Antimony at a concentration of 139 ppm was detected in soil sample B64-2, from a boring located north of the PDC building. Manganese was detected at elevated levels in two subsurface soil samples; 14,500 ppm in sample B11-4 and 10,800 ppm in sample B43-3. The borings from which these two soil samples were collected are located west of the PDC building. All of these soil samples were collected in the fill layer.

As was noted in the above discussions, the subsurface soil samples having elevated levels of inorganic compounds were, in all but a few cases, collected from the fill layer. Generally, the surface soil sample collected from each boring contained the highest concentrations of metals. However, in a few cases, the soil sample collected from the bottom of the fill exhibited the highest metals concentrations. This occurred in the bottom fill samples collected from

The results of the Phase I and Phase II sediment sample metals analysis were compared to the ER-M values for the following metals (the number of samples in which the concentration exceeded the ER-M values appears in parentheses after each metal): antimony (two samples), arsenic (ten samples), cadmium (twelve samples), chromium (nine samples), copper (nine samples), lead (fourteen samples), mercury (thirteen samples), nickel (eight samples), silver (twelve samples), and zinc (thirteen samples). These sediment samples along with their concentrations are listed in Table 3-16. The location of these sediment samples are shown on Figure 3-25.

Surface Water:

Levels of inorganic compounds were detected in all of the Phase II surface water samples. Antimony, beryllium, silver, and thallium were the only TAL metals not detected in any of the surface water samples. Cyanide was detected in only one surface water sample; at 13.9 ppb in sample SW-9.

The following inorganic compounds were detected at levels exceeding the NJDEPE ambient water quality criteria for surface water (the number of Phase I and II samples in which the criteria was exceeded appears in parentheses after each compound): aluminum (nine samples), arsenic (two samples), cadmium (five samples), chromium (three samples), copper (nine samples), iron (seven samples), lead (nine samples), manganese (seven samples), mercury (nine samples), zinc (eight samples), and cyanide (one sample). These surface water sample results and associated surface water quality criteria are shown in Table 3-13. The sample locations

concentrations were, as anticipated, lower in filtered as opposed to unfiltered ground water samples.

- ° Mercury was detected in slightly elevated concentrations (greater than 10 ppb but less than 100 ppb) in wells MW-5S, MW-13S, and MW-14S. The highest mercury concentration detected in the shallow wells was 29.6 ppb in well MW-5S. "Background" well MW-11S contained 0.75 ppb of mercury. Two shallow wells, MW-2S and MW-6S, did not contain any detectable levels of mercury. During the February 1993 sampling event mercury was detected in unfiltered samples at 0.88 ppb in MW-4S, 1.0 ppb in MW-5S, and 2.5 ppb in MW-14S. Filtered samples from each of these wells indicated non-detectable levels of mercury in the February 1993 sampling event.
- ° The ground water from wells MW-12S and MW-13S was found to have slightly elevated levels (greater than 100 ppb) of nickel. The highest nickel concentration of 182 ppb was detected in the ground water from well MW-13S. Other nickel concentrations in the shallow ground water ranged from not detected to 98.2 ppb. "Background" well MW-11S contained 20.3 ppb of nickel. Nickel was not detected in any shallow wells during the February 1993 sampling event.

Intermediate Wells:

The results of the inorganic compound analyses in the on- and off-site intermediate wells indicate that some impact to the intermediate ground water zone has occurred, particularly in the northern and southern portions of the site. However, the concentrations of metals detected in the intermediate wells are generally lower than those levels detected in the shallow wells. As with the shallow wells and designated "background" well MW-11S, well MW-11I appears to be relatively unimpacted by inorganic contaminants as compared to the rest of the on- and off-site intermediate wells. Thus, the inorganic levels detected in well MW-11I were considered "background" in evaluating the inorganic compound concentrations detected in the more highly impacted wells (see Figure 3-29).

- ° Arsenic was detected in slightly elevated concentrations (greater than 10 ppb but less than 100 ppb) in wells MW-5I, MW-8I, MW-10I, and MW-12I. A significantly elevated value (above 1,000 ppb) was measured in well MW-1I at 1,460 ppb. The remaining intermediate wells all contained low levels of arsenic ranging from 2.1 ("background" well MW-11I) to 9 ppb. Arsenic was reported at 93 ppb in the February 1993 sampling event in unfiltered ground water from well MW-5I, but was undetected in a duplicate filtered sample.
- ° Slightly elevated concentrations (greater than 10 ppb but less than 100 ppb) of lead were also noted in several intermediate depth wells including MW-9I, MW-12I, and MW-13I. Well MW-13I is located along the southern border of the site and wells MW-9I and MW-12I are located off-site to the north and west, respectively. Two elevated levels (greater than 100 ppm but less than 1,000 ppb) of lead was detected in wells MW-5I and MW-10I, located in the south central and northern portions of the site, respectively, at concentrations of 268 ppb and 350 ppb, respectively. The other lead concentrations in the intermediate wells ranged from not detected ("background" well MW-11I and well MW-8I) to 6.6 ppb (well MW-3I). Once again, while an unfiltered sample indicated 283 ppb of lead during the February 1993 sampling event, a filtered sample indicated non-detect.
- ° Only one intermediate well contained an elevated (greater than 100 ppb but less than 1,000 ppb) level of mercury, well MW-5I at 170 ppb. This result was verified by the detection of 306 ppb of mercury in the February 1993 sampling round. However, a duplicate filtered sample indicated a non-detectable concentration of mercury. In addition, only one other intermediate well contained a detectable level of mercury, well MW-8I at 0.23 ppb. The remaining intermediate wells contained no detectable levels of mercury, including "background" well MW-11I.

Deep Wells and Bedrock Well:

None of the deep wells contained concentrations of inorganic compounds that could be considered elevated based on the levels detected in the shallow and intermediate wells. The concentrations of metals detected in the ground water samples from the three deep wells were somewhat similar, except that the ground water sample from well MW-1D exhibited higher levels of calcium, magnesium, manganese, and sodium than the other ground water samples

NJDEPE, a wetland is identified on-site. The wetland is linear and classified as an Upper Perennial Riverine wetland with an unconsolidated bottom. It should be noted that this identified wetland is that which exists along the on-site drainage channel. This channel, which contains contaminated sediment and surface water, is also lined with concrete.

Inorganic contaminants were identified as contaminants of concern based on the analytical results of the remedial investigation. Those compounds that, based on the ecological assessment may be of concern include copper, zinc, arsenic, cadmium, chromium, lead, mercury, and cyanide.

Contaminant Fate and Transport

The inorganic compounds, volatile organic compounds, semivolatile organic compounds, pesticides and PCBs, and dioxin were evaluated with respect to their concentration in the environmental media on-site and likelihood of any future contaminant migration. The presence of each of these types of compounds in the soil was likely responsible for elevated levels of the contaminants in the on-site ground water. Potential off-site migration was noted for inorganic compounds, volatile organic compounds, and pesticides and PCBs, particularly via sediment and surface water drainage. There is little evidence to suggest that significant off-site horizontal migration of any of the contaminants is occurring in the ground water.

compounds. Based on the information available on these potential contaminant sources, the remedial action objective for the waste materials is to prevent migration of contaminants from existing sources that continue to impact the soil and ground water quality.

For soil, the contaminants of interest include PAHs (and caPAHs), pesticides, PCBs, arsenic, lead, cadmium, and mercury. The presence of arsenic in the soil presents a potential health risk to human health, through dermal contact and soil/dust ingestion. The presence of inorganic compounds in general also have the potential to produce adverse environmental effects. Based on this information, the remedial action objectives for soils are as follows:

- ° minimize exposure to surficial soil contaminants; and
- ° minimize migration of subsurface contaminants in the ground water.

In the case of surface water and sediment, the contaminants of concern are VOCs, SVOCs, pesticides and PCBs, and several inorganic compounds including arsenic, lead and mercury. The remedial action objectives for the sediment are:

- ° prevent exposure to contaminants within the site sediment; and
- ° prevent impacts to surface or ground water quality.

The remedial action objectives for the surface water are:

- ° prevent exposures to contaminants in the surface water; and
- ° prevent migration of contaminants off-site.

For ground water, the contaminants of interest include volatile organic compounds, semivolatile organic compounds, and inorganic compounds. The presence of aromatic hydrocarbons, arsenic, lead, and mercury in the ground water may present a risk to potential

ground water receptors in the area. Based on this information, the remedial action objective for the ground water is as follows:

- ° prevent continued migration of compounds detected at levels exceeding action levels in the site ground water.

TABLE 3-8
SOIL BACKGROUND LEVELS FOR INORGANICS

	NJ Background Levels(1) (ppm)	USGS Background Levels(2) (ppm)	HWLT Levels(3) (ppm)	NJDEPE Non-Residential Surface Soil Action Level (ppm)
Aluminum	—	72,000	73,000	—
Antimony	—	0.66	—	340
Arsenic	4.52	7.2	5	20
Barium	—	580	430	26,000
Beryllium	1.43	0.92	6	2
Cadmium	0.25	—	0.6	100
Calcium	—	24,000	—	—
Chromium	9.8	54	100	—
Cobalt	—	9.1	8	—
Copper	17.9	25	30	600
Iron	12,700	26,000	—	—
Lead	63.2	19	10	600
Magnesium	—	9,000	5,000	—
Manganese	229	550	600	—
Mercury	0.18	0.09	0.03	260
Nickel	10.2	19	40	2,400
Potassium	—	15,000	—	—
Selenium	0.08	0.39	0.3	1,000
Silver	0.14	—	0.05	2,000
Sodium	—	12,000	—	—
Thallium	—	9.4	—	2
Vanadium	17.9	80	100	7,000
Zinc	58.8	60	50	1,500
Cyanide	—	—	—	5,200

(1) — Fields, T.W. et al 1989

(2) — USGS, 1984

(3) — Hazardous Waste Land Treatment, USEPA SW874, 19

TABLE 3-9, CONTINUED
SUMMARY OF PHASE I AND II SURFACE SOIL INORGANIC ANALYSIS RESULTS
EXCEEDING CLEANUP STANDARD LEVELS

Compound	Sample Number	Phase	Concentration (ppm)	Cleanup Standard (ppm)
	B64-1	II	629	
	B2-1	I	709	
	B3-1	I	618	
	B4-1	I	1300	
	B6-1	I	1420	
	B7-1	I	724	
	B8-1	I	891	
	B11-1	I	871	
	B13-1	I	2220	
	B15-1	I	2350	
	B15-4(3)	I	1630	
	B19-1	I	2290	
	B20-1	I	727	
	B21-1	I	744	
	B24-1	I	2050	
	B25-4(4)	I	651	
	B28-1	I	1120	
	B30-1	I	1380	
	B31-1	I	6160	
	B33-1	I	3250	
	SS-15	II	639	
	SS-1	I	768	
	SS-2	I	820	
	SS-5	I	724	
	SS-9(5)	I	1110	
	SS-7	I	3500	
	M11I-1*	II	2280	
	M1-1	I	1070	
	M2-1	I	980	
	M5-1	I	3020	
Mercury	B13-1	I	868	260
	SS-7	I	278	
Thallium	B16-1	I	92	2
Zinc	B52-1	II	1940	1500
	B53-1	II	1740	
	B24-1	I	2350	
	B33-1	I	2450	
	M5-1	I	2890	

* = Sample taken at 1-3'

(1) = Duplicate Sample of SS-16

(2) = Duplicate Sample of B45-1

(3) = Duplicate Sample of B15-1

(4) = Duplicate Sample of B25-1

(5) = Duplicate Sample of SS-5

TABLE 3-12
NEW JERSEY SURFACE WATER QUALITY CRITERIA
FOR CONTAMINANTS DETECTED IN SURFACE WATER

	Acute(a)	Chronic(c)	Noncarcinogen(h)	Carcinogen(hc)	Possible Carcinogen(hcc)
<u>Pesticides/PCBs</u>					
beta-BHC	-	-	-	-	0.137
Dieldrin	2.5	0.0019	-	0.000135	-
Chlordane(total)	2.4	0.0043	-	0.000277	-
PCBs	-	0.014	-	0.000244	-
<u>Base Neutrals/Acid Extractables</u>					
Phenol	-	-	20900	-	-
1,4-Dichlorobenzene	-	-	343	-	-
1,2-Dichlorobenzene	-	-	2520	-	-
bis(2-Chloroisopropyl)ether	-	-	1250	-	-
1,2,4-Trichlorobenzene	-	-	30.6	-	-
Diethyl Phthalate	-	-	21200	-	-
Fluorene	-	-	1340	-	-
Pentachlorophenol(1)	9.07	5.73	-	0.282	-
Phenanthrene	-	-	-	0.0028	-
di-n-Butyl Phthalate	-	-	3530	-	-
bis(2-Ethylhexyl) Phthalate	-	-	-	1.76	-
<u>Volatile Organics</u>					
Vinyl Chloride	-	-	-	0.0830	-
Methylene Chloride	-	-	-	2.49	-
trans 1,2-Dichloroethene	-	-	592	-	-
Chloroform	-	-	-	5.67	-
1,2-Dichloroethane	-	-	-	0.291	-
1,1,1-Trichloroethane	-	-	127	-	-
Carbon Tetrachloride	-	-	-	0.363	-
Trichloroethene	-	-	-	1.09	-
Benzene	-	-	-	0.150	-
Tetrachloroethene	-	-	-	0.388	-
Toluene	-	-	7440	-	-
Chlorobenzene	-	-	22	-	-
Ethyl Benzene	-	-	3030	-	-
<u>Inorganics</u>					
Aluminum	750	87	-	-	-
Arsenic	360	190	-	0.017	-
Barium	-	-	2000	-	-
Cadmium(2)	2.84	0.905	15.9	-	-
Chromium	16	11	160	-	-
Copper(2)	13.52	9.25	-	-	-
Iron	-	1000	-	-	-
Lead(2)	56.6	2.2	5	-	-
Manganese	-	-	100	-	-
Mercury	2.4	0.012	0.144	-	-
Nickel(2)	1112	123.6	516	-	-
Selenium	20	5	179	-	-
Zinc(2)	91.7	83.1	-	-	-
Cyanide	22	5.2	768	-	-

(1) = Criteria Dependent on pH. For This Report a Value of pH=7 Was Assumed.

(2) = Value Dependent on Hardness. For This Report a Value of Hardness=125mg/l Was Assumed.

'-' = No Criteria Exists

a = Limit Represents Acute Aquatic Life Protection as a One-Hour Average

c = Limit Represents Chronic Aquatic Life Protection as a Four-Day Average

h = Limit Represents Noncarcinogenic Effect-Based Human Health Criteria as a 30-Day Average with no Frequency of Exceedence at or above the Design Flow

hc = Limit represents Carcinogenic Effects-Based Human Health Criteria as a 70-Year Average with no Frequency of Exceedence at or above the Design Flow and Are Based on a Risk Level of One-in-One-Million

hcc = Limit Represents Toxic Substances Considered To Be Possible Human Carcinogens for which There Is Insufficient Data To Develop Criteria on Systemic Effects and Are Based on a Risk level of One-in-One-Hundred-Thousand

TABLE 3-13, CONTINUED
SURFACE WATER SAMPLES
SUMMARY OF SAMPLES EXCEEDING NEW JERSEY
SURFACE WATER QUALITY CRITERIA

	Sample ID	Phase	Concentration ($\mu\text{g/l}$)	Criteria Limit($\mu\text{g/l}$)
Manganese	SW-1	I	553	100(h)
	SW-3	I	172	
	SW-7	II	1290	
	SW-9	II	239	
	SW-16(1)	II	206	
	SW-14	II	576	
	SW-15	II	511	
Mercury	SW-1	I	10	0.012(c)
	SW-2	I	32	
	SW-4(2)	I	31	
	SW-3	I	1.5	
	SW-7	II	10.1	
	SW-9	II	5.94	
	SW-16(1)	II	2.41	
	SW-14	II	37.6	
	SW-15	II	9.3	
Zinc	SW-1	I	258	83.1(c)
	SW-2	I	106	
	SW-4(2)	I	110	
	SW-3	I	583	
	SW-7	II	289	
	SW-9	II	654	
	SW-16(1)	II	374	
	SW-14	II	86.9	
Cyanide	SW-9	II	13.9	5.2(c)

(1) = Duplicate Sample of SW-9

(2) = Duplicate Sample of SW-2

c = Limit Represents Chronic Aquatic Life Protection as a Four Day Average

h = Limit Represents Noncarcinogenic Effect-Based Human Health Criteria as a 30-Day Average with no Frequency of Exceedence at or above the Design Flow

hc = Limit represents Carcinogenic Effects-Based Human Health Criteria as a 70-Year Average with no Frequency of Exceedence at or above the Design Flow and Are Based on a Risk Level of One-in-One-Million

hcc = Limit Represents Toxic Substances Considered To Be Possible Human Carcinogens for which There Is Insufficient Data To Develop Criteria on Systemic Effects and Are Based on a Risk level of One-in-One-Hundred-Thousand

TABLE 3-16, CONTINUED
SUMMARY OF SEDIMENT ANALYSES RESULTS EXCEEDING
NOAA EFFECTS RANGE-MEDIAN VALUES*

Contaminant	Sample Number	Phase	Concentration	ER-M Concentration
	SD11-2	II	612	
	SD14-2	II	11000	
	SD15-1	II	3980	
	SD15-2	II	1190	
	SD1	I	141	
	SD2	I	1520	
	SD4(2)	I	1500	
	SD3	I	1610	
	SS-4	I	579	
	SS-6	I	2510	
MERCURY	SD7-1	II	133	1.3
	SD7-2	II	121	
	SD8-1	II	64	
	SD8-2	II	2.59	
	SD9-3(1)	II	17	
	SD10-1	II	45.2	
	SD10-2	II	7.7	
	SD11-1	II	65.5	
	SD11-2	II	49.6	
	SD15-1	II	286	
	SD15-2	II	286	
	SD2	I	1570	
	SD4(2)	I	1580	
	SD3	I	5.1	
	SS-4	I	2.2	
	SS-6	I	23	
NICKEL	SD7-1	II	103	50
	SD7-2	II	65.2	
	SD8-1	II	50.3	
	SD9-3(1)	II	56.6	
	SD14-2	II	66	
	SD15-1	II	198	
	SD2	I	119	
	SD4(2)	I	105	
	SS-4	I	67	
SILVER	SD7-1	II	8	2.2
	SD7-2	II	4	
	SD8-1	II	11.8	
	SD9-3(1)	II	45.5	
	SD10-1	II	5.4	
	SD11-1	II	4.7	
	SD11-2	II	6	
	SD14-2	II	11.7	
	SD15-1	II	61	
	SD15-2	II	11.4	
	SD2	I	33	
	SD4(2)	I	29	
	SD3	I	26	
ZINC	SD7-1	II	926	270
	SD7-2	II	710	
	SD8-1	II	764	
	SD9-3(1)	II	1590	
	SD10-2	II	303	
	SD11-1	II	724	
	SD11-2	II	2440	
	SD14-2	II	1370	
	SD15-1	II	3530	

TABLE 1

WEHRAN ENGINEERING SAMPLING RESULTS
AUGUST 25, 1981 RESULTS IN PPM (MG/L)

PARAMETER	MW1	MW1A	MW2	MW2A	MW3	MW3A
MERCURY	0.385*	0.185*	0.085*	22.96*	0.502*	<0.0004
ZINC	1.0	9.3*	1.2	3.3	4.0	0.37

ALL SAMPLES WERE ANALYZED FOR ZINC AND MERCURY

* INDICATES CONTAMINATION ABOVE NJDEP ACTION/CLEANUP LEVELS.

TABLE 2

WEHRAN ENGINEERING SAMPLING RESULTS
NOVEMBER 17, 1981 - RESULTS IN PPM (MG/L)

PARAMETER	MW1	MW1A	MW2	MW2A	MW3	MW3A
MERCURY	0.0223*	0.0313*	0.507*	1.0333*	0.2382*	-
COPPER	0.94	1.02*	0.70	1.70*	1.00*	0.72
LEAD	<0.05	<0.05	0.20*	0.15*	<0.05	1.00*
ZINC	0.57	0.24	1.97	0.73	0.13	0.83
ALDRIN	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
BHC	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
B-BHC	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
BHC	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
BHC	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
CHLORDANE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
4,4' - DDT	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
4,4' - DDE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
4,4' - DDD	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
DIELDRIN	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
ENDOSULFAN	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
B- ENDOSULFAN	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
ENDOSULFAN SULFATE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
ENDRIN	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

TABLE 3
WEHRAN ENGINEERING SAMPLING RESULTS
MAY 14, 1982 - RESULTS IN PPM (MG/L)

PARAMETER	MW1	MW1A	MW2	MW2A	MW3	MW3A
MERCURY	0.036*	0.027*	0.018*	12.50*	0.055*	1.85*

ALL SAMPLES WERE ANALYZED FOR MERCURY ONLY.
* INDICATES CONTAMINATION ABOVE NJDEP ACTION\CLEANUP LEVELS.

TABLE 4
WEIRAN ENGINEERING SAMPLING RESULTS
MAY 24, 1982 - RESULTS IN PPM (MG/L)

PARAMETER	MW1	MW1A	MW2	MW2A	MW3	MW3A
MERCURY	0.035*	0.224*	0.047*	25.29*	0.059*	0.024*

ALL SAMPLES WERE ANALYZED FOR MERCURY ONLY.
* INDICATES CONTAMINATION ABOVE NJDEP ACTION/CLEANUP LEVELS.

TABLE 5
NJDEP SAMPLING RESULTS
NOVEMBER 17, 1981 - RESULTS IN PPM (MG/L)

PARAMETER	MW1	MW1A	MW2	MW2A	MW3	MW3A
MERCURY	.0056*	.008*	-	.074*	.041*	.0176*
COPPER	.811	.449	-	2.055*	1.027*	1.840*
LEAD	.333*	.048	-	.556*	.156*	.630*
ZINC	1.445	.191	-	1.43	1.065	4.010
COD	385	628	399	958	780	688
CHLORIDE	110	800*	980*	1150*	2400*	510*
AROCHLOR 1254	ND	ND	.0075*	.0065*	ND	ND

ALL SAMPLES WERE ANALYZED FOR COPPER, MERCURY, LEAD, ZINC, PESTICIDE/PCBs, CHLORIDE AND COD. ALTHOUGH THE ENTIRE PESTICIDE/PCBs SCAN WAS RUN ON ALL SAMPLES, AROCLOR 1245 WAS DETECTED IN ONLY TWO OF THE SAMPLES.

* INDICATES CONTAMINATION ABOVE NJDEP ACTION/CLEANUP LEVELS.

TABLE 6
NJDEP SAMPLING RESULTS
MAY 24, 19822 - RESULTS IN PPM (MG/L)

PARAMETER	MW1	MW1A	MW2	MW2A	MW3	MW3A
MERCURY	.0005	.0005K	.0065*	.0335*	.073*	.265*
ARSENIC	.194*	.188*	.005K	.016	.005K	.244*
CADMIUM	1K	.004	.002	.001	.005	.001
LEAD	.013	.045	.143*	.013	.511*	.016
CHROMIUM, HEXAVALENT	.005K	.013	.005K	.008	.024	.005K
CYANIDE	.001K	.001K	.024	.691*	.001K	.483*
CHLORIDE	120	640*	2570*	1330*	520*	760*
COD	365	415	180	590	114	510
1,1-DICHLOROETHANE	ND	ND	ND	.030*	ND	.058*
1,2-DICHLOROTHENE	ND	ND	ND	.520*	ND	.150*
1,1,1-TRICHLOROETHENE	ND	ND	ND	ND	ND	1.360*
TRICHLOROETHYLENE	ND	ND	ND	.380*	ND	.100*
TETRACHLOROETHYLENE	ND	ND	ND	.110*	ND	.007*
BENZENE	ND	.012*	ND	.700*	ND	.062*
TOLUENE	ND	.004	.004	.006	ND	.036
ETHYLBENZENE	ND	ND	ND	ND	ND	.023
P-XYLENE	ND	ND	ND	ND	ND	.006
N-PROPYLBENZENE	ND	ND	ND	ND	ND	.041

TABLE 7
WATER SAMPLES (cont.)
JULY 12, 1979

METALS (13)	SAMPLE CONC. UG/L (PPB)	100 FEET UPSTREAM OF SITE	5 FEET UPSTREAM OF SITE	WITHIN PLANT DOWNSTREAM OF WWTP	WITHIN PLANT 50 FEET BEFORE DOWNSTREAM SIDE OF PROPERTY	100 YARDS DOWNSTREAM OF PLANT	250 YARDS DOWNSTREAM OF PLANT	EASTERN DRAINAGE DITCH 50 FT. 1 STREAM 1 SEPTIC LEACH F
ANTIMONY	-	-	-	-	-	-	-	-
ARSENIC	PPB	BDL	BDL	BDL	BDL	36	8J	1300
BERYLLIUM	PPB	BDL	BDL	2J	1J	BDL	BDL	1J
CADMIUM	PPB	3J	3J	4J	2J	2J	3J	6J
CHROMIUM	PPB	31	26	23	24	22	10J	20J
COPPER	PPB	97	76	70	63	45	28	60
LEAD	PPB	BDL	BDL	BDL	BDL	BDL	BDL	170
MERCURY (WATER)	PPB	BDL	55	21	26	84	71	886
NICKEL	PPB	BDL	BDL	BDL	BDL	BDL	BDL	405
SELENIUM	PPB	BDL	BDL	BDL	BDL	BDL	BDL	BDL
SILVER	PPB	24	BDL	14	13	8J	BDL	BDL
THALLIUM	PPB	BDL	BDL	BDL	BDL	BDL	BDL	BDL
ZINC	PPB	100J	100J	100J	100J	50J	50J	270

TABLE 8

NOVEMBER 17, 1989

(all results in ppb unless otherwise indicated)

	<u>SED-1</u>	<u>SED-2</u>	<u>SED-3</u>	<u>SED-4</u>
vinyl chloride			29,000	4
methylene chloride			37,000	
1,1-dichloroethene		1,900		
1,1-dichloroethane	21	36,000	240,000	11
1,2-dichloroethene	7	2,300	1,300,000	22
chloroform			190,000	9
2-butanone			250,000	
1,1,1-trichloroethane		1,400,000	3,100,000	41
trichloroethene		61,000	430,000	
Benzene	40	43,000	1,200,000	45
4-methyl-2-pentanone		5,200		29
tetrachloroethene	7	2,300,000	2,100,000	46
chlorobenzene		4,100	31,000	10
2-methylphenol			56,000	
2,4-dimethylphenol			89,000	
naphthalene		5,500	31,000	
2-methylnaphthalene		17,000	190,000	
bis(2-ethylhexyl)phthalate	26,000	160,000		
Arsenic (ppm)	70.2	115	167	71.7
Copper (ppm)	188	1,090	1,040	694
Lead (ppm)	1,880	5,270	25,200	2,460
Mercury (ppm)	690	4,500	607,000	1,790
PHC's	21,000,000	38,000,000	31,000,000	83,000,000

TABLE 9

NOVEMBER 17, 1989

(all results in ppb unless otherwise indicated)

	<u>SED-5</u>	<u>SED-6</u>	<u>SED-7</u>
methylene chloride		35,000	9
acetone		120,000	
2-butanone		110,000	
xylene	21	130,000	7
benzene		300,000	55
toluene		37,000	
1,4-dichlorobenzene			1,700
1,2-dichlorobenzene			3,600
nitrobenzene			7,500
1,2,4-trichlorobenzene			10,000
2-methylnaphthalene		67,000	35,000
diethylphthalate		1,700	
fluorene		7,100	2,200
phenanthrene	760	24,000	11,000
anthracene	100	13,000	11,000
di-n-butylphthalate	140	24,000	
fluoranthene	1,200	11,000	14,000
pyrene	710	5,900	9,300
butylbenzylphthalate		62,000	
chrysene	460	3,000	4,800
bis(2-ethylhexyl)phthalate	340	340,000	420,000
di-n-octylphthalate		21,000	21,000
4,4'-DDD	840	180,000	
4,4'-DDT	340	66,000	
Aroclor-1242			650,000
Arsenic (ppm)	20.1	1,390	1,980
Barium (ppm)		7,960	766
Cadmium (ppm)		74.5	77.2
Chromium (ppm)		254	419
Copper (ppm)		1,200	1,680
Lead (ppm)	175	13,400	5,150
Mercury (ppm)	210	9,641	2,270
PHC's	260,000	270,000	14,000,000

TABLE 10

	CONCENTRATION	NEAR DUMPSTER	SOUTH OF FUNGICIDE PLANT	DRUM STORAGE SOUTH OF WAREHOUSE	DRUM STORAGE "YARD AREA"	NJDEP AC CLEANUP LEVEL
COPPER	MG/KG PPM	899.12*	361.84*	3289.47*	67.98	170
LEAD	MG/KG PPM	110.0	500.0*	105.0	90.0	250-1000
ARSENIC	MG/KG PPM	ND	3.361	2.185	0.798	20
ZINC	MG/KG PPM	3950.73*	1195.75*	2447.22*	51.19	350
MERCURY	MG/KG PPM	>60*	>60*	>60*	>60*	1
p,p-DDT	UG/KG PPB	32.76		ND		1,000- 10,000
p,p-DDD	UG/KG PPB	32.86		ND		1,000- 10,000
o,p-DDT	UG/KG PPB	25.0		ND		1,000- 10,000

TABLE 11

SUMMARY OF SAMPLING DATA
METALS

PAGE 14

Troy

DATE SAMPLED 11-17-88

SAMPLE NO.

MATRIX

UNITS ^(ppm)

	S-10	S15	S25	S35	S45	S55
Aluminum						
Antimony						
Arsenic						55.7
Barium		1000			1320	584
Beryllium	8.4	43.2				
Cadmium						4
Calcium						
Chromium	151	398				
Cobalt						
Copper		4010			174	185
Iron						
Lead	2380	3830	153	246	3920	2840
Magnesium						
Manganese						
Mercury	910	2810	355	736	2540	240
Nickel	503	1860				
Potassium						

KEATING Environmental Management, Inc.

One Worlds Fair Drive, 3rd Floor, Somerset, NJ 08873

Tel: (908) 805-0606

FAX (908) 805-0043

732

UNDERGROUND STORAGE TANK CLOSURES REMEDIAL INVESTIGATION/REMEDIAL ACTION REPORT

Tomkins Tidewater Terminals
South Kearny, NJ

KEM File #5660

August 1997

Prepared for:

Tomkins Tidewater Terminal
921 Bergen Avenue
Jersey City, NJ

000002

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96-04-22-1522-31

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South Kearny, New Jersey
Remedial Investigation/Remedial Action Report**

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**Tomkins Tidewater Terminal
South Kearny, New Jersey
Remedial Investigation/Remedial Action Report**

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Figure 1.	Site Location Map
Figure 2.	Partial Site Plan
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Figure 5.	UST #6 Area
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APPENDICES

Appendix 1	UST Closure Approval, Certifications & Checklist
Appendix 2	Photographic Log
Appendix 3	Data Summary Sheets (Post-Remedial Samples)
Appendix 4	Tank/Scrap Metal Disposal Documentation
Appendix 5	Liquid Disposal Documentation
Appendix 6	Soil Disposal Documentation
Appendix 7	Backfill Documentation
Appendix 8	Analytical Data Reports (attached)



TABLE 4 (CONTINUED)

TOMKINS TIDEWATER
1 JACOBUS AVE., KEARNY, NJ
UST 3 & 4 & 10 & WO
POST-REMEDIAL SOIL SAMPLE ANALYTICAL RESULTS SUMMARY

Sample Date Depth (ft)	NJDEP Soil Cleanup Criteria* (ppm)	TK-WOPE1 2/7/97 2.5-3	TK-WOPE2 2/7/97 2.5-3	TK-WOPE3 2/7/97 2.5-3	FB 2/7/97
Volatile Organics (ppm):					
Methylene Chloride	49	0.024	0.014	0.015	ND
Library Search	NS	ND	ND	0.02	ND
Semivolatile Organics** (ppm):					
Naphthalene	230	0.085 J	ND	0.034 J	NA
Acenaphthene	3,400	0.032 J	ND	ND	NA
Acenaphthylene	NS	0.041 J	ND	ND	NA
Fluorene	2,300	0.027 J	ND	ND	NA
Phenanthrene	NS	0.084 J	ND	0.11 J	NA
Anthracene	10,000	0.026 J	ND	0.037 J	NA
Fluoranthene	2,300	0.084 J	0.024 J	0.099 J	NA
Pyrene	1,700	0.16 J	ND	0.096 J	NA
Benzo(a)anthracene	0.9	0.085 J	ND	0.14 J	NA
Benzo(b)fluoranthene	NS	0.29	ND	0.22 J	NA
Library Search	NS	5.19	0.2	3.28	NA
Pesticides/PCBs, Total (ppm):	0.49	0.32	ND	ND	NA
Metals (ppm):					
Antimony	14	8.84	ND	2.78	NA
Arsenic	20	<u>42.8</u>	2.2	19.1	NA
Beryllium	1	0.622	0.356	0.611	NA
Cadmium	1	<u>23.8</u>	ND	<u>5.3</u>	NA
Chromium	NS	26.5	6.71	16.4	NA
Copper	600	133	9.61	97.1	NA
Lead	400	280	4.27	145	NA
Mercury	14	0.523	ND	0.299	NA
Nickel	250	32.6	8.72	23.8	NA
Zinc	1500	2020 2060	95.5	842	NA

* - NJDEP Residential Direct Contact Soil Cleanup Criteria

** - Include Base Neutrals and Acid Fraction

ppm - parts per million

NA - Not analyzed

ND - Not detected

NS - No standard established

J - Estimated value.

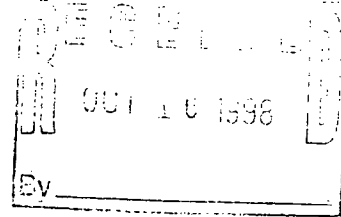
Underlined results exceed cleanup criteria

THE
WHITMAN
Companies,
INC.

File 1/3

44 West Ferris Street
East Brunswick, N.J. 08816
Tel.: (732) 390-5858
Fax: (732) 390-9496

October 12, 1998



Judy Bayard
New Jersey Department of Environmental Protection
Bureau of Underground Storage Tanks
401 East State Street
P.O. Box 433
Trenton, NJ 08625-0433

RE: Remedial Investigation Report
Tomkins Tidewater Terminal
South Kearney, New Jersey
Whitman Project #95-10-04C
Case #96-04-22-1522-31
Closure #C96-0197, UST #0312554

Dear Ms. Bayard:

The Whitman Companies, Inc. (Whitman) is pleased to submit two (2) copies of the Remedial Investigation Report for the Tomkins Tidewater Terminal facility located in South Kearny, New Jersey.

The report provides information which addresses the deficiencies and requirements outlined in the NJDEP comment letter of November 19, 1997, including additional documentation from Keating Environmental Management, Inc. (Keating) and the results of Whitman's soil and ground water investigation at the property.

If you have any questions, please contact me at (732) 390-5858, Extension 49.

Very truly yours,

Gary Rakow
Project Scientist

GR/dmv

cc: Alan Lambiase, River Terminal Development Company

030000035

**REMEDIAL INVESTIGATION REPORT
FOR
TOMKINS TIDEWATER TERMINAL
SOUTH KEARNY, NEW JERSEY
CASE #96-04-22-1522-31**

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**REMEDIAL INVESTIGATION REPORT
FOR
TOMKINS TIDEWATER TERMINAL
SOUTH KEARNY, NEW JERSEY
CASE #96-04-22-1522-31**

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2. Soil Boring Locations And Arsenic Results
3. Monitoring Wells And Temporary Well Points
4. Ground Water Contour Map
5. Proposed Soil Excavation

ATTACHMENTS

1. NJDEP Comment Letter, November 19, 1997
2. Keating Letter To Whitman, April 10, 1998
3. Water Line – Vicinity Of UST 1
4. Facility Questionnaires
5. Keating Letter To NJDEP, January 27, 1998
6. Site Investigation/Remedial Investigation Report Checklist
7. Well Permits/Records/Logs
8. Well Purge/Sampling Data
9. Laboratory Data Sheets



respectively, exceeding the NJSCC of 1 ppm. Zinc was detected in sample TK-WOPE1 at a concentration of 2,020 ppm, exceeding the NJSCC of 1,500 ppm. None of the other soil sample results for the waste oil tank area exceeded the applicable cleanup criteria.

3.1.2 Delineation Sampling – March 26, 1998

On March 26, 1998, Whitman conducted delineation soil sampling at the location of the former waste oil tank UST WO. Three (3) soil samples, SB-1 through SB-3, were collected at the soil/ground water interface (2.5–3.0 ft.) using a hollow stem auger and decontaminated split spoons. Drilling services were provided by Summit Drilling, Inc, Bridgewater, New Jersey. All samples were submitted to Accutest, Dayton, New Jersey, for analysis of priority pollutant metals.

Sample locations and arsenic results are shown on Figure 2.

Analytical results for all priority pollutant metals are summarized in Table 1 below.

TABLE 1
ANALYTICAL RESULTS
Delineation Soil Sampling Conducted on March 26, 1998

Sample ID Depth Units	Residential NJSCC (mg/kg)	SB-1 2.5-3.0 ft (mg/kg)	SB-2 2.5-3.0 ft (mg/kg)	SB-3 2.5-3.0 ft (mg/kg)
Antimony	14	<6.9	<8.2	<7.0
Arsenic	20	19.1	27.4	2.9
Beryllium	1	<0.58	<0.68	<0.58
Cadmium	1	<0.58	<0.68	<0.58
Chromium	500	16.4	30.1	11.1
Copper	600	40.8	31.0	11.9
Lead	400	175	231	<12
Mercury	14	0.55	0.27	<0.11
Nickel	250	14.2	18.3	9.9
Selenium	63	<12	<14	<12
Silver	110	<1.2	<1.4	<1.2
Thallium	2	<1.2	<1.4	<1.2
Zinc	1500	232	113	48.7

Bold type indicates reported concentration is above the New Jersey Soil Cleanup Criteria.

Arsenic was detected at a concentration of 27.4 ppm in sample SB-2, exceeding the NJSCC of 20 ppm. None of the other sample results exceeded the applicable cleanup criteria.



Alfred Heller Heat
Treating Co.

HEAVY METALS SOURCE DETERMINATION STUDY

IN COMPLIANCE WITH OCEAN DUMPING PERMIT
NO. NJ0003 INTERIM SECTION 3(c)

Passaic Valley Sewerage Commissioners

JOSEPH M. KEEGAN	- Chairman
BEN W. GORDON	- Vice Chairman
THOMAS J. CIFELLI	- Commissioner
VINCENT CORRADO	- Commissioner
ROBERT J. DAVENPORT	- Commissioner
RICHARD M. GIACOMARRO	- Commissioner
CHARLES A. LAGOS	- Commissioner
CARMINE T. PERRAPATO	- Executive Director
ROCCO D. RICCI	- Chief Engineer

PHASE II

APRIL 1980

DRAFT

Elson T. Killam Associates, Inc.

Environmental and Hydraulic Engineers



KILL013740

PASSAIC VALLEY SEWERAGE COMMISSION - HEAVY METAL SOURCE DETERMINATION
 PHASE II INDUSTRIAL CONTRIBUTION
 SUB-AREA 6

PAGE 1

CONTROL NO.	NAME AND ADDRESS OF INDUSTRY	FLOW MGD	TOTAL CADMIUM LBS/DAY (MG/L)	TOTAL CHROMIUM LBS/DAY (MG/L)	TOTAL COPPER LBS/DAY (MG/L)	TOTAL LEAD LBS/DAY (MG/L)	TOTAL NICKEL LBS/DAY (MG/L)	TOTAL ZINC LBS/DAY (MG/L)	TOTAL ARSENIC LBS/DAY (MG/L)	TOTAL MERCURY LBS/DAY (MG/L)
130	AIRCRAFT ENGINEERING PRODUCTS INC. 2 ACKERMAN AVE. CLIFTON	0.0001	0.000 (0.032)	0.001 (1.220)	0.000 (0.210)	0.000 < (0.086)	0.000 (0.005)	0.001 < (0.623)	0.000 (0.001)	0.0000 (0.008)
140	ATLANTIC CASTING & ENGINEERING CORP. 80 BLOOMFIELD AVE. CLIFTON	0.0120	0.001 (0.005)	0.008 (0.076)	0.005 < (0.051)	0.001 < (0.005)	0.001 (0.005)	0.010 < (0.103)	0.000 (0.001)	0.0001 (0.001)
150	BRIGHT STAR INDUSTRIES INC. 400 GETTY AVE. CLIFTON	0.0280	0.004 (0.016)	0.003 (0.011)	0.015 (0.063)	0.024 (0.103)	0.009 (0.040)	1.569 (6.720)	0.000 (0.001)	0.0000 (0.009)
170	EDMAR CREATIONS 35 MONHEGAN ST. CLIFTON	0.0100	0.001 (0.014)	0.052 (0.618)	1.643 (19.700)	0.023 (0.277)	1.485 (17.800)	0.976 (11.700)	0.000 (0.001)	0.0000 (0.003)
190	FRITZCHE DODGE & OLCOTT INC. 85 THIRD ST. CLIFTON	0.8420	0.042 (0.006)	1.489 (0.212)	0.407 (0.058)	0.456 (0.065)	1.250 (0.178)	0.351 (0.050)	0.007 (0.001)	0.0000 (0.001)
210	A. HELLER HEAT TREATING CO. 5 WELLINGTON ST. CLIFTON	0.0300	0.766 (3.060)	0.156 (0.625)	0.029 (0.114)	0.013 (0.051)	0.091 (0.365)	5.730 < (22.900)	0.000 (0.001)	0.0000 (0.003)
220	INMONT CORP. 1255 BROAD ST. CLIFTON	0.0500	0.028 (0.068)	0.271 (0.651)	1.080 (2.590)	0.102 (0.244)	0.031 (0.074)	2.644 (6.340)	0.003 (0.006)	0.0218 (0.052)
250	MAJOR POOL EQUIPMENT CORP. 200 ENTIN RD. CLIFTON	0.0001 <	0.000 (0.005)	0.001 (0.743)	0.001 (0.729)	0.002 < (2.000)	0.000 (0.005)	0.006 < (7.139)	0.000 (0.001)	0.0000 (0.000)
260	MICROTRONICS CORP. 156 HURON AVE. CLIFTON	0.0750	0.012 < (0.019)	0.003 (0.005)	6.880 (11.000)	0.513 (0.820)	0.111 (0.175)	0.061 < (0.097)	0.001 (0.001)	0.0000 (0.001)
270	MISSEBRENNER PRINTS INC. 211 MOUNT PROSPECT AVE. CLIFTON	0.5000	0.042 (0.010)	1.059 (0.254)	0.755 (0.181)	0.133 (0.032)	0.267 (0.054)	0.367 < (0.088)	0.004 (0.001)	0.0163 (0.004)

KL1015825

**Alliance Chemical
Inc./Pfister**

Return to:
PASSAIC VALLEY SEWERAGE COMMISSIONERS
790 Broad Street
Newark, N. J. 07102

Date: May 10, 1972

Plant Ref. No. IFE0446

WASTE EFFLUENT SURVEY

(For Industries Served by the Passaic Valley Sewerage Commissioners)

Plant Name: Alliance Chemical Inc.

Address: 33 Avenue P, Newark, New Jersey Zip 07105

Person and Title to whom any further inquiries should be directed:

Richard D. Leonard - Plant Manager

Phone No.: 344-2344

Number of Employees: 45

Number of Working Days Per Week: Normally 5

Number of Shifts Per Day: 3

Area of Property: Acres, or approx. 150,000 Sq. Ft.

Type of Industry and 4 digit U. S. Standard Industrial Classification No.:

Chemical - SIC 2815

Finished Product(s): Dyestuffs, Intermediates for Textile Industry

Average Production: Confidential

Raw Materials Used: Amine type bases - too numerous to itemize

Brief Description of Operations: Batch Chemical Processes - Clarification, Filtration,

Sulfonation, Nitrations, Chlorinations, Diazotations, Condensations, Simple mixing and blending, drying, etc.

NEW YORK TESTING LABORATORIES, INC.

Page

Lab No.

RESULTS

Effluents 24 hr.
12-12-79

Color (Pt/Co Units)	12
Turbidity (NTU)	30
pH (@ 20 Deg. C.)	6.67

Results in mg/l

Total Solids	31240
Total Volatile Solids	7182
Total Mineral Solids	24058
Total Suspended Solids	2355
Volatile Suspended Solids	930
Mineral Suspended Solids	1425
Emulsified Oil and Grease	1006.0
Chlorides	15078
Sulfate	620
BOD-5 Day	4600
COD	10870
Total Organic Carbons	2010
Sulfide	100.0
Sulfite	200
Surfactants	80.8
TKN as N	1360
Ammonia as N	1021
Nitrate as N	7.74
Nitrite as N	0.09
Ortho-Phosphate as P	0.09
Phenols	2.046
Antimony	< 0.10
Arsenic	0.140
Boron	< 1.0
Cadmium	0.158
Total Chromium	0.063
Copper	17.31
Iron	19.81
Lead	1.043
Mercury	0.005
Nickel	0.116
Selenium	0.070
Silver	0.056
Tin	< 0.72
Zinc	549.1

<None detected, less than

PASSAIC VALLEY SEWERAGE COMMISSIONERSSEWER CONNECTION APPLICATIONPART I - SECTIONS A-CSECTION A: GENERAL INFORMATION

Applicant is:

Corporation ☒Partnership ☐Other ☐

1. Company Name: Alliance Chemical Inc.
2. Location: 33 Avenue P (Property on 309-327 Avenue P?)
Newark, New Jersey Zip Code: 07105
3. Mailing Address: 33 Avenue P,
Newark, New Jersey Zip Code: 07105
Name, title, address and telephone number of person to contact concerning information provided in this application:
4. Name of Contact Official: W. C. Henning
Title: Plant Manager Phone No.: 201-344-2344
5. Address: Alliance Chemical Inc., 33 Avenue P, Newark, N.J. 07105
6. Number of Employees - Full Time: 48 Part Time:
7. Number of Work Days Per Week: 5
Number of Shifts Per Day: 3
Is production seasonal? No If so, explain:
8. New Users Only: Indicate date user desires to commence operations:
9. If property is owned, indicate Lot and Block Numbers: Block No. 5020
Lot No's. 3 - 8 - 12 19 Assessed Value \$219,600
10. If property is rented, indicate name and address of Landlord:

SECTION B: PRODUCT OR SERVICE INFORMATION

11. Brief description of manufacturing or other activity performed:
Manufacture of organic intermediates for use in the
textile, paper and pigment industries.
12. Principal raw materials used: Organic chemicals, acids and bases.
13. Principal products or services: As described in #11.

REPORT TO THE NEAREST HUNDREDTH: 0.XX (EXCEPT WHERE INDICATED) (EXAMPLE: 0.36 mg/l)		
CODE	PARAMETER	VALUE
1097	Antimony (Sb)	<0.1
1002	Arsenic (As)	<0.1
1022	Boron (B)	<1.0
1027	Cadmium (Cd)	.158
1034	Chromium Total (Cr)	.068
1042	Copper (Cu)	17.31
1045	Iron (Fe)	19.81
1051	Lead (Pb)	1.043

REPORT TO THE NEAREST HUNDREDTH: 0.XX (EXCEPT WHERE INDICATED) (EXAMPLE: 0.36 mg/l)		
CODE	PARAMETER	VALUE
1900	(Report to Mercury 0.XXX)	.005
1067	Nickel (Ni)	.116
1147	Selenium (Se)	.070
1077	Silver (Ag)	.056
1102	Tin (Sn)	<0.78
1092	Zinc (Zn)	549.1
4053	(Report to Pesticides 0.XXX)	
2730	Phenol	2.046

29. Samples collected by: Alliance Chemical Inc. Date: 12/12/79

30. Samples analyzed by: New York Testing Lab. Date: 12/31/79

Products being manufactured when sample was collected: _____

Organic intermediates as described in #11.

Certification:

The information contained in Part II of this application is familiar to me and, to the best of my knowledge and belief, such information is true, complete, and accurate.

If the applicant is a corporation, a corporate resolution is attached granting me the authority to sign the application on behalf of the corporation.

31. Name of Signing Official: W. C. Henning

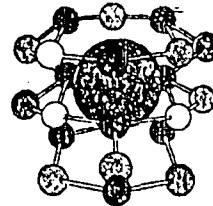
Title: Plant Manager

Jan 29, 1980
Date

W. C. Henning
Signature

Stablex-Reutter Inc.

The Reutter Building, Ninth and Cooper Streets
Camden, New Jersey 08101
Telephone: 609 - 541-6700 TWX: 7108910547



March 16, 1981

NJDEP
Solid Waste Division
32 Hanover Street
Trenton, NJ 08625

Attention: Mr. David Schrier, Hazardous Waste Bureau

Reference: Revised Test Report No. S-1259; Final

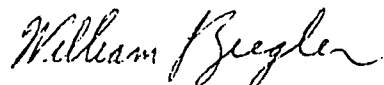
This report covers the analysis of six (6) waste samples submitted to Stablex-Reutter, Inc. (SRI) on November 26, 1980. The analysis adhered to procedures as described in the following publications.

- . Standard Methods for the Examination of Water and Wastewater, 14th Edition
- . U.S.E.P.A. Methods for Organochlorine Pesticides and Chlorophenoxy Acid Herbicides in Drinking Water and Raw Surface Water, July, 1978
- . U.S.E.P.A. Analysis of Trihalomethanes in Finished Waters by the Purge and Trap Method, September, 1977

The parameters analyzed and results are delineated in the attached tables. All results are in micrograms of constituent per gram of sample. If you have any questions concerning this analysis, please don't hesitate to contact me.

Respectfully submitted,

STABLEX-REUTTER, INC.



William J. Ziegler
Laboratory Manager

WJZ:dp
Att.

Stablex-Reutter Inc.

NJDEP

Solid Waste Division

Revised Test Report No. S-1259; Final

March 16, 1981

Metal Analysis

Sample and Designation

<u>Constituent</u>	<u>S1259-2</u> <u>A0330</u>	<u>S1259-3</u> <u>A0331</u>	<u>S1259-4</u> <u>A0332</u>	<u>S1259-5</u> <u>A0333</u>
Arsenic, total	<0.1	<0.1	<0.1	<0.1
Beryllium, total	<0.5	<0.5	<0.5	<0.5
Cadmium, total	0.5	43	<0.5	<0.5
Chromium, total	<2.5	<2.5	<2.5	<2.5
Lead, total	<2.5	<2.5	<2.5	<2.5
Mercury, total	<0.2	18	<0.2	<0.2
Selenium, total	0.38	0.22	0.15	0.21
Chromium, Hexavalent	<1	<1	<1	<1
Nickel, total	<2.5	<2.5	<2.5	<2.5

All results are in micrograms of constituent per gram of sample.

Miscellaneous Analysis

Sample and Designation

<u>Constituent</u>	<u>S1259-6</u> <u>A0334</u>
N-Butyl Bromide, %	>95%

NEW YORK TESTING LABORATORIES, INC.
P.O. BOX 464, 81 URBAN AVENUE, WESTBURY, L.I., N.Y. 11590 • (516) 334-7770 • (212) 297-1449

Page 1 of 2

REPORT OF TESTS

Client — 80-58584 - Pfister Chemical Inc. (Alliance Chemical Inc.)
Material — One (1) Activated Carbon Clarification Cake
Client's Order No. — Letter Dated April 15, 1980
Identification — See Page Two
Submitted for — Chemical Analysis

Leachate test was performed on submitted activated carbon cake in accordance with ASTM Procedure.

(For results see the following page)

CERTIFICATION

We certify that this report is a true report of results obtained from our tests of this material.

To:

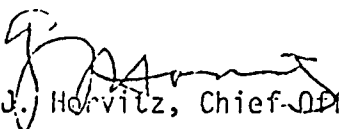
Pfister Chemical Inc.
Ridgefield
New Jersey 07657

Att: Mr. D. P. Turtle

mg

Respectfully submitted,

NEW YORK TESTING LABORATORIES, INC.


G. J. Horvitz, Chief Officer

Chemical Analysis - Results

	<u>Solid</u>	<u>Leachate</u>
pH at 20 deg. C.	8.45	8.72
Specific Conductance (μ mhos/cm) at 20° C.	3300	2800
Total Solids (%)	52.82	0.2
Moisture Content (%)	47.18	99.8

Results in (PPM)

Total Volatile Solids	188031	122
Total Dissolved Solids	964	1828
Oil & Grease	82718	8.0
Cyanide	4.99	0.01
Phenols	12.914	0.324
COD	806336	17169
Total Organic Carbon	19000	3125
Ammonia (as N)	339.3	11.63
Arsenic	0.19	0.011
Cadmium	47.57	0.041
Chromium	4.69	0.033
Copper	17.23	0.148
Lead	337.16	0.077
Molybdenum	< 1.0	< 0.50
Mercury	0.07	0.001
Nickel	8.28	0.118
Selenium	0.54	0.038
Silver	< 0.10	< 0.008

< None detected, less than




T E C H N I C A L D A T A

RESULTS OF EP TOXICITY

SAMPLE WAS TAKEN FROM LOW LYING UNUSED DITCH AREA
ON 11/20/80 AND ANALYSIS DONE BY MALCOLM PIRNIE, INC.

CONSTITUENT

LEAD	<0.1 MG/L
CADMIN	<0.01
SILVER	<0.01
CHROMIUM	<0.05
BARIUM	<0.05
MERCURY	<0.001
SELENIUM	<0.005
ARSENIC	<0.005



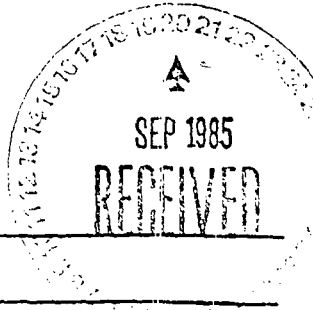
ARTHUR F. GUSMANO
TECHNICAL DIRECTOR

12/2/80

ATTACHMENT A-6

Passaic Valley Sewerage Commissioners
APPLICATION FOR A SEWER CONNECTION PERMIT

SECTION A



1. Company Name: ALLIANCE CHEMICAL INC.
2. Permit number if applicable, 20401080
3. Location: 33 AVE P
NEWARK, NEW JERSEY Zip Code: 07105
4. Mailing Address: SAME
Zip Code: _____
5. Person to contact concerning information provided in this application:
Name of Contact Official: WILLIAM C. HENNING
Title: PLANT MANAGER Phone No. 344-2344
Address: SAME Zip Code _____
6. Number of Employees - Full Time: 36 Part Time: 0
Number of Work Days Per Year: 260
Number of Shifts Per Day: 3
7. If property is owned indicate block and lot numbers:
BLOCK NO. 5020 LOT NO. 3,8,12
Assessed Value: _____ 19 _____
8. If property is rented indicate name and address of owner:
NOT APP.

Total square feet rented: _____
9. List NJPDES Permit number if applicable, NOT APPL. and
name of receiving body of water entered _____

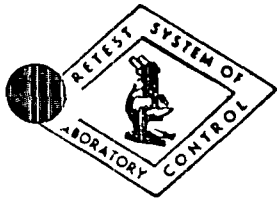
GARDEN STATE LABORATORIES, INC.

Bacteriological and Chemical Testing

399 Stuyvesant Avenue

Irvington, N.J. 07111

120-6289



THEW KLEIN, M.S., Director

Telephone
201-373-8007

ALLIANCE CHEMICAL INC.
3 AVENUE P
NEWARK, NJ 07105

SAMPLE SUBMITTED: TUES. AUGUST 20, 1985

RESULTS ARE IN MG/L UNLESS NOTED.

ASTE-WATER SAMPLE OUTLET #20401080

TOTAL SOLIDS	74300 mg/l 7.43% WET WEIGHT	BORON	0.06
TOTAL MINERAL SOLIDS	9900 mg/l 0.99%	CADMIUM	0.30
TOTAL SUSPENDED SOLIDS	2,130.	CHROMIUM	0.05
MINERAL SUSPENDED SOLIDS	1,060.	COPPER	0.68
IL & GREASE	437.	IRON	5.05
BIOCHEMICAL OXYGEN DEMAND	1,965.	LEAD	1.32
CHEMICAL OXYGEN DEMAND	7,912.	CYANIDE	0.002
TOTAL ORGANIC CARBON	1,060.	MERCURY	0.003
SULFIDE	4.0	NICKEL	<0.02
PH - STANDARD UNITS	6.59	SELENIUM	<0.001
TOTAL KJELDAHL NITROGEN	2890.	SILVER	0.12
AMMONIA-NITROGEN	67	TIN	<1.0
ORTHOPHOSPHATE	<1.0	ZINC	2,380.
ANTIMONY	<0.1	PHENOL	4.5
ARSENIC	<0.001		

File No. 07-14-13

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
DIVISION OF RESPONSIBLE PARTY SITE REMEDIATION
DISCHARGE RESPONSE ELEMENT

ADMINISTRATIVE COST RECOVERY
ENFORCEMENT REFERRAL

TO: Cathy Wooley, Financial Management

DATE: 1/13/93

FROM: Y-R. Yacoub Yacoub, Region Chief, MFO

RE: Alliance Color and Chemical Co 9107085805m RRE
Case name Incident # PAC

309-325 Avenue P 85020 L36,8 & 12 0714
Location of Violation Block and Lot Cty/Mun Code

309-325 Avenue P Newark N.J. 07105
Mailing Address (Street, City, State, Zip code)

Alliance Color and Chemical Co/ Richard Braun
Responsible Party/Contact Name

The inspection/investigation was conducted between 7/8/91 (9201) and
10/2/92 (9201). It is recommended that an **ADMINISTRATIVE COST RECOVERY**
DEMAND LETTER be issued.

SPECIFIC HAZARDOUS SUBSTANCES INVOLVED: Toluene, Mercury, Lead

COMMENTS: Quarterly billing - ongoing case

REVIEWED AND APPROVED BY:

[Signature] 1/13/93

[Signature] 01-09-93

File No. 02-14-13

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
DIVISION OF RESPONSIBLE PARTY SITE REMEDIATION
DISCHARGE RESPONSE ELEMENT

ADMINISTRATIVE COST RECOVERY
ENFORCEMENT REFERRAL

TO: Cathy Wooley, Financial Management

DATE: 11/13/93

FROM: Yacoub Yacoub, Region Chief, MFO

RE: Alliance Color and Chemical Co 910708505m RRE
Case name Incident # PAC

309-325 Avenue P 85020 L36,8 & 12 0714
Location of Violation Block and Lot Cty/Mun Code

309-325 Avenue P Newark N.J. 07105
Mailing Address (Street, City, State, Zip code)

Alliance Color and Chemical Co/ Richard Braun
Responsible Party/Contact Name

The inspection/investigation was conducted between 10/3/92 and
1/8/93. It is recommended that an **ADMINISTRATIVE COST RECOVERY**
DEMAND LETTER be issued.

SPECIFIC HAZARDOUS SUBSTANCES INVOLVED: Toluene, Mercury, Lead

COMMENTS: Quarterly billing - ongoing case

MOA

REVIEWED AND APPROVED BY:

Daniel E. [Signature] 1/27/93
185-776 02-02-93

RESPONSE TO QUESTIONS

Time Period 1965 - 1970 unless otherwise noted

1) ACETIC ACID

- 1a. Used in mfg. of 1-Diazo-3-methyl-4- pyrrolidinobenzene to aid crystallization.
 - 1b. 1-Diazo-3-methyl-4- pyrrolidinobenzene
 - 1c. 1968 1 batch 1969 3 batches 1970 19 batches
 - 1d. Zinc Chloride
 - 1e. Approx. 75%
2. Zinc chloride 1.8 lbs./lb. Product is generated during the reduction of nitro pyrrolidinotoluene to the amine.
All process liquors were combined in the plant sewers.
Carbon clarification cake is produced during purification at ~ 0.1 lb/lb product. See Attachment 1.
3. Process liquors flowed to a neutralization tank where pH was adjusted to >5.0 and <10.5 .
These liquors were continuously discharged.

2) ACETONE

- 1a. Used only in the laboratory as a solvent.
 - 1b. None
 - 1c. N/A
 - 1d. N/A
 - 1e. N/A
2. N/A
3. N/A

3) Acetylene

- 1a. Used in maintenance dept. For cutting and welding.

AAFC00142

**Alliance Chemical Inc.
Documents and Comments
Concerning CERCLA 104(e)
Response**

Submitted by
Maxus Energy Corporation
Responding on behalf of
Occidental Chemical Corporation

December 5, 1994

AAE000509

**INDEX OF DOCUMENTS IN SUPPORT OF COMMENTS
REGARDING CERCLA 104(E) RESPONSE OF
ALLIANCE CHEMICAL INC.**

TAB A Letter from Steve Huntley

TAB B Maps of the Alliance Facility and the Roanoke Avenue CSO District

MAP 1: Location map illustrating the location of the facility and the pathway of effluent to the Passaic River.

MAP 2: August 23, 1988 map showing routing of process wastewater from the Alliance facility down the sewer line on McGregor Avenue to the sewer line on Avenue P. This map was obtained from the PVSC.

MAP 3: City of Newark Department of Engineering maps showing that the Avenue P sewer flows north to the Roanoke Avenue sewer line.

MAP 4: Map detailing the Roanoke Avenue Combined Sewer Outfall from Clinton Bogert Report entitled "Newark Pollution Abatement Study."

TAB C Document concerning 1948 discharge of a "yellow colored clear liquid" to Plum Creek

PVSC - April 1948 - Stream Contamination Report

TAB D Documents concerning red acid discharge to Plum Creek

06/28/65 - Alliance memorandum regarding USACOE inspection of Plum Creek and Alliance facility; inspection identified discharge from acid pit to creek, suspected correlation to acidic levels detected in river; writer also voiced concerns regarding underground seepage from acid pit

12/22/65 - Alliance Chemical memorandum regarding USACOE 12/07/65 inspection and sampling of Plum Creek, and expected citation; writer indicated that discharge was result of a malfunction of the acid collection system

AAFC00510

A circular logo featuring several vertical white stripes of varying widths against a dark background. The logo is positioned at the top left of the page.

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Index of Documents in Support of Comments Regarding
CERCLA 104(e) Response of Alliance Chemical Inc.
Page 3

- TAB D (cont)**
- 06/26/69 - PVSC letter to Alliance regarding pollution of Passaic River emanating from facility, and requesting action and time schedule for cessation of polluting activities
 - 06/27/69 - Alliance letter to PVSC regarding response to PVSC letter of 06/26/69, and detailing actions taken to date to alleviate discharge
 - 08/13/69 - Alliance letter to PVSC regarding time schedule of actions to be taken to alleviate discharge and connect Alliance to Avenue P sanitary and storm sewer
 - 01/08/70 - PVSC memorandum detailing information regarding Alliance manufacturing description, estimated flow rates, and expected connection to city sewers by 02/02/70
 - 02/16/79 - PVSC letter to Alliance regarding delay of connection to city sewer, and requesting an updated schedule for cessation of polluting activities
 - 02/19/70 - Alliance letter to PVSC indicating estimated connection to city sewer by 03/15/70, 04/10/70 at the latest, and describing planned cessation of all discharges to Plum Creek

TAB E Documents showing that xylol was in Alliance's waste stream in 1969

- 12/18/69 - PVSC letter to Alliance regarding presence of hazardous materials in facility discharge, and requiring that material be identified and eliminated from discharge prior to connection to city sewer
- 12/24/69 - Alliance memorandum indicating that most likely flammable material in effluent is xylol

TAB F Selected documents concerning Alliance's effluent after 1972

- 05/04/72 - Hydrosience letter to Alliance transmitting results of analysis of industrial waste
- 05/10/72 - PVSC Waste Effluent Survey completed by Alliance
- 04/27/73 - City of Newark letter to Alliance regarding violations of water quality standards for BOD, suspended solids and greasy materials in effluent discharge

Index of Documents in Support of Comments Regarding
CERCLA 104(e) Response of Alliance Chemical Inc.
Page 4

TAB F 02/22/77 - NJDEP Industrial Waste Survey
(cont)

05/22/79 - PVSC Weekly Resume for 05/21/79 - 05/25/79

06/30/80 - NJDEP Selected Substance Report, obtained by Maxus from
NJDEP Division of Site Assessment in Robbinsville,
New Jersey

TAB G **Documents showing contamination of site and severe flooding**

04/14/67 - Alliance internal letter regarding flooding problems at the
facility, city actions regarding the installation of new sewer
lines, and difficulties presented if Alliance is required to
connect to sewer lines; writer notes that sewer connection
would provide the city with a method of monitoring Alliance's
wastes, and would require proper neutralization of wastes
entering the sewer.

08/05/68 - Alliance memorandum regarding flooding problems at the
facility, effects of flooding on effluent discharge system, and
proposed modifications.
Includes observation that current method of effluent
treatment is an inadequate form of neutralization of plant
wastewater

01/23/69 - Alliance memorandum regarding instructions for conducting
sampling survey of Plum Creek.
Survey pH results graph attached

02/07/69 - Alliance memorandum regarding survey of Plum Creek water
quality at Alliance outfall.
Survey pH results

03/21/72 - Alliance letter to City of Newark regarding flooding problems
at facility

06/21/72 - Alliance letter to City of Newark regarding flooding problems
at facility

06/27/72 - Alliance letter to Mayor of City of Newark regarding flooding
problems at facility

AAFC000513

Index of Documents in Support of Comments Regarding
CERCLA 104(e) Response of Alliance Chemical Inc.
Page 5

TAB G 10/19/89 - AnalytiKEM Analytical Data Report Package regarding soil
(cont) sampling conducted at Alliance facility, includes sampling
 results, facility maps, sampling locations and effluent
 treatment system diagrams

TAB H New Jersey Community Right to Know Survey of Alliance's facility in 1988

TAB I Copy of analysis of aerial photographs

TAB J NJDEP Report of Site Investigation for Alliance Facility with Summary of
 sampling data

AAFC00514

SUMMARY OF SAMPLING DATA

1. Sampling date: May 10, 1985
Sampled by: E.C. Jordan Company
P.O. Box 7050, DTS
Portland, Maine 04112
Samples: Nine soil samples were collected
Laboratory: Environmental Testing and Certification Corporation
284 Raritan Center Parkway
Edison, New Jersey 08837
Certification #12257
Parameters: 2,3,7,8-TCDD
Sample description: 1. All samples were collected at 0 to 12 inches.
2. Samples were collected at the rear of the site in the area of the former lagoon as well as in the area of the neutralization tank.
Contaminants detected: No 2,3,7,8-TCDD was detected.
QA/QC: There were no records that could be found regarding any QA/QC review being conducted.
File location: NJDEP/DHWM/Metro Enforcement
West Orange, New Jersey
2. Sampling date: October 19, 1989
Sampled by: NJDEP, Bureau of Planning and Assessment
Division of Hazardous Waste Management
Samples: A total of eleven soil samples were collected, one of which was a duplicate.
A. Laboratory: Envirodyne Engineering
1908 Innerbelt Business Center
St. Louis, MO 63114-5700
Certification # Not certified
Parameters: All samples were analyzed for Target Compound List + 30 peaks and five additional samples for 2,3,7,8-TCDD
B. Laboratory: Analytikem
28 Springdale Road
Cherry Hill, New Jersey 08003
Certification # 04012
Parameters: Three samples for Petroleum Hydrocarbons
Sample description: 1. All samples were collected at depths from 0 to 6 feet.
2. Samples were collected at the rear of the site in the area of the former lagoon and trench. Additional samples were collected from several piles of soil on site.
Contaminants detected: See Tables # 1 and 2
QA/QC: Both quality assurance and quality control reports are pending from BEMQA. NJDEP Chain-of-Custody forms were used for all samples collected and a 2, 3, 7, 8-TCDD proficiency sample was included.

AAFC00676

File location:

New Jersey Dept. of Environmental Protection
Division of Hazardous Waste Management
Bureau of Planning and Assessment
65 Prospect Street
Trenton, New Jersey

PRIORITY DESIGNATION

This site is assigned a medium priority designation, based on available information and the potential for groundwater, surface water and air contamination.

RECOMMENDATIONS/CONCLUSIONS

Due to conditions at Alliance Chemical it is recommended that the New Jersey Department of Environmental Protection take action to have Alliance begin soil remediation. Additionally, the closing of the lagoon should be pursued.

It is recommended that additional samples be collected at Alliance to determine contamination levels in other areas of the site. Samples should be collected from the front part of the property (facing Avenue P). This area was the site of a former junkyard. Additional samples should be collected at depth from the area of the former lagoon to determine other contaminants present, their levels and vertical extent at depth of contamination.

Samples of both soil and water should be collected from the area of the tidal basin, this area may have been the scene of an unpermitted discharge from a wastewater trench.

It is further recommended that groundwater monitoring be initiated. During the October 19, 1989 sampling episode conducted by representatives of the NJDEP, DHWM, BPA water was encountered at a depth of approximately 5 feet. Soil contaminants may be leaching into groundwater due to the high water table.

Submitted by:

Jerry O'Donnell
HSMS IV
Bureau of Planning and Assessment
January 24, 1990

AAFC000677

TABLE -4

SUMMARY OF SAMPLING DATA

METALS

PPM

PAGE 11 OF 1

DATE SAMPLED - Oct 18, 1989

SAMPLE NO.

MATRIX - S.S.

UNITS

	S-1	S-2	S-3	S-4	S-5	S-7	S-8	S-9	S-10	S-11	S-13
Aluminum	1630	4540	5400	5350	5250	41630	3010	4950	1420	2730	3490
Antimony						17.8					
Arsenic	3.5	4.1	6.3	6.3	15.4	7.9	5.5	8.2	3.2	6.1	6.9
Barium	58.2	211	361	811	1420	201	50.9	289	68.9	52.8	52.2
Beryllium	2.7	2.9	4.2	3.7	4.0	2.4	2.3	2.9	2.9	8.0	5.6
Cadmium	1.7	3.8	5.5	11.8	10.9	2.2		6.0		141	17.2
Calcium	3920	8530	5860		3440	11830	7320	6790		3730	4160
Chromium	92.6	56.9	126	58.1	38.9	30.4	4.8	61.9	16.3	29.5	44.6
Cobalt											
Copper	103	244	139	207	254	267	62.7	1050	90.9	118	130
Iron	23700	19100	26700	25200	29600	15800	13300	17100	16900	43300	58200
Lead	180	475	420	773	1430	632	171	1040	140	194	250
Magnesium	1530	2350	2430	2760		1660		2250		2620	
Manganese	1550	258	258	354	339	158	730	219	61.9	244	261
Mercury	96.3	2.2	0.27	2.0	1.4	2.7	1.7	2.0	0.28	0.79	0.69
Nickel	36.5	28.5	25.4	39.6	32.0	33.2	13.0	49.5	15.3	30.1	15.2
Potassium		1580	1890	1840				1870			

4410506600

PASSAIC VALLEY SEWERAGE COMMISSION
NEWARK, NEW JERSEY

HEAVY METALS SOURCE DETERMINATION STUDY

IN COMPLIANCE WITH OCEAN DUMPING PERMIT
NO. NJ003 INTERIM SECTION B(1)

Passaic Valley Sewerage Commissioners

JOSEPH M. KEEGAN	- Chairman
BEN W. GORDON	- Vice Chairman
THOMAS J. CIFELLI	- Commissioner
VINCENT CORRADO	- Commissioner
ROBERT J. DAVENPORT	- Commissioner
RICHARD M. GIACOMARRO	- Commissioner
CHARLES A. LAGOS	- Commissioner
CARMINE T. PERRAPATO	- Executive Director
ROCCO D. RICCI	- Chief Engineer

PHASE II

APRIL 1980

100-100000

Elson T. Killam Associates, Inc.

Environmental and Hydraulic Engineers



PASSAIC VALLEY SEWERAGE COMMISSION - HEAVY METAL SOURCE DETERMINATION
 PHASE II INDUSTRIAL CONTRIBUTION
 SUB-AREA 0

CONTROL NO.	NAME AND ADDRESS OF INDUSTRIAL	FLOW ADD	TOTAL CADMIUM LBS/DAY (MG/L)	TOTAL CHROMIUM LBS/DAY (MG/L)	TOTAL COPPER LBS/DAY (MG/L)	TOTAL LEAD LBS/DAY (MG/L)	TOTAL NICKEL LBS/DAY (MG/L)	TOTAL ZINC LBS/DAY (MG/L)	TOTAL ARSENIC LBS/DAY (MG/L)	TOTAL MERCURY LBS/DAY (MG/L)
390	CHARLES B. SELLER CO. 219 SOUTH 10TH ST. EAST ORANGE	0.0040	0.000 (0.012)	0.281 (8.420)	0.012 (0.357)	0.001 (0.022)	0.001 (0.038)	0.006 (0.166)	0.000 (0.001)	0.0000 (0.001)
420	A & L PEEKS INC. 36 SEABOARD ST. NEWARK	0.0150	0.001 (0.005)	0.005 (0.038)	0.014 (0.108)	0.003 (0.020)	0.011 (0.087)	0.000 (0.001)	0.0000 (0.000)	0.0000 (0.000)
425	AKUL CHEMICAL KUTHERFORD ST. NEWARK	0.0020	0.000 (0.008)	0.002 (0.090)	0.004 (0.220)	0.001 (0.030)	0.000 (0.010)	0.007 (0.410)	0.000 (0.001)	0.0001 (0.005)
430	ALLIANCE CHEMICAL INC. 33 AVE. F NEWARK	0.1170	0.027 (0.028)	0.309 (0.317)	0.418 (0.428)	0.701 (0.718)	0.268 (0.274)	853.772 (870.000)	0.001 (0.001)	0.0024 (0.002)
440	ALL PLATING & CASTING INC. 589 FERRY ST. NEWARK	0.0190	0.015 (0.093)	0.014 (0.091)	1.348 (8.510)	0.003 (0.022)	0.472 (2.980)	0.056 (0.351)	0.039 (0.245)	0.0001 (0.001)
450	ANODIZING CORP. 39 AVE. L NEWARK	0.0090	0.000 (0.005)	0.124 (1.650)	0.010 (0.135)	0.021 (0.282)	0.001 (0.011)	0.005 (0.066)	0.000 (0.001)	0.0003 (0.003)
452	ARKANSAS CO. INC. 185 FOUNDRY ST. NEWARK	0.0280	0.002 (0.007)	0.008 (0.033)	0.008 (0.036)	0.021 (0.089)	0.007 (0.032)	0.074 (0.315)	0.000 (0.001)	0.0029 (0.012)
455	AKUL CHEMICAL PRODUCTS CO. 649 FERRY ST. NEWARK	0.0001	0.000 (0.005)	0.000 (0.005)	0.000 (0.008)	0.000 (0.005)	0.000 (0.005)	0.000 (0.014)	0.000 (0.001)	0.0000 (0.000)
460	ARI METAL U. S. A. INC. 300 PASSAIC ST. NEWARK	0.1480	0.010 (0.008)	6.480 (5.250)	0.128 (0.104)	0.415 (0.336)	0.032 (0.026)	2.382 (1.930)	0.001 (0.001)	0.0006 (0.000)
470	ASHLAND OIL INC. 400 DUKEMUS AVE. NEWARK	0.3140	0.047 (0.018)	0.202 (0.077)	0.141 (0.054)	0.278 (0.106)	0.013 (0.005)	0.526 (0.201)	0.003 (0.001)	0.0029 (0.001)

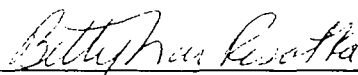
Alpha Metals

SOIL SAMPLING RESULTS REPORT
AND
PROPOSAL FOR SOIL REMEDIATION

Alpha Metals, Inc.
680 Schuyler Avenue
Building #9
Kearny, New Jersey

February 5, 1992

Prepared by:



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Assistant Vice President

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(201) 398-8183



SOIL SAMPLING RESULTS REPORT
AND
PROPOSAL FOR SOIL REMEDIATION

Alpha Metals, Inc.
680 Schuyler Avenue
Building #9
Kearny, New Jersey

February 5, 1992

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Laboratory Results and QA/QC Data

3.2 Heavy Metals

The B-series samples were analyzed for antimony, cadmium, chromium, lead, mercury, selenium, silver, and zinc. Selenium, lead and chromium were identified in the background samples (B11, B13, B14, and B15) at concentrations above NJDEPE Soil Action Levels for these metals. In other areas of the property, antimony, zinc, copper, silver and mercury were detected at concentrations above their respective Soil Action Levels.

It is quite evident that the metals are contained in the fill material used in this area. This is indicated by their random distribution and concentrations across the site. In addition, none of the metals (except for lead) were used in Alpha Metals manufacturing process. For these reasons, metals are not considered a concern.

3.3 Base Neutral Compounds

Samples B07-1, B08-2, B10-1, B14-2, and B16-2 contained carcinogenic BN compounds at 18.34 ppm, 39.52 ppm, 14.56 ppm, 49.49 ppm, and 15.12 ppm, respectively: these concentrations exceed the 10 ppm Soil Action Level for this parameter. BN+15 concentrations in samples B08-2 (384.16 ppm) and B14-2 (140.85 ppm) also exceed the 100 ppm Soil Action Level. Since B14 was a background sample location, it appears that elevated concentrations of BN compounds are inherent in the fill material used in this area and the parameter is not a concern.

APPENDIX B

TABLES

SOIL SAMPLING RESULTS REPORT
AND
PROPOSAL FOR SOIL REMEDIATION

Alpha Metals, Inc.
680 Schuyler Avenue
Building #9
Kearny, New Jersey

TABLE 1

Alpha Metals, Inc.
Delineation Soil Sampling Results
Total Petroleum Hydrocarbons and Priority Pollutant Metals

Sample #	B01-1	B01-2	B02-1	B02-2	B02-2 Dup	B03-1	B03-2	B04-1	B04-2	B05-1	B05-2	B05-2 Dup	B06-1
Sample Depth (feet)	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	1.5-2.0	0.5-1.0
Sample Date	7-31-91	7-31-91	7-30-91	7-30-91	7-30-91	7-26-91	7-26-91	7-29-91	7-29-91	7-29-91	7-29-91	7-29-91	7-25-91
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TPHC (ppm):	793	724	2590	66	69	4400	2005	434	456	191	47	48	257

Priority Pollutant Metals (ppm):

Antimony	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	NA	ND
Cadmium	2.28	2.13	1.48	1.37	NA	1.50	2.10	1.59	5.53	3.55	0.89	NA	2.00
Chromium	15.40	19.20	3.45	2.28	NA	150.00	27.90	15.40	29.50	7.59	3.98	NA	470.00
Lead	62.80	85.20	6.89	4.56	NA	705.00	263.00	186.00	245.00	228.00	7.52	NA	120.00
Mercury	0.24	0.56	0.42	0.10	NA	0.46	0.28	0.40	0.55	1.29	0.09	NA	0.15
Selenium	ND	ND	ND	ND	NA	5.03	8.43	ND	ND	ND	ND	NA	10.00
Silver	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	NA	ND
Zinc	103.00	127.00	49.20	50.20	NA	307.00	189.00	154.00	1350.00	861.00	41.60	NA	85.00

Alpha Metals, Inc.

Total Petroleum Hydrocarbons and Priority Pollutant Metals

Priority Pollutant Metals (ppm)

Antimony	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	1.40	1.62	1.11	1.29	2.07	1.02	1.01	4.21	24.70	1.60	ND	1.00	1.10
Chromium	200.00	16.10	14.90	353.00	26.40	4.60	6.55	23.70	4.76	75.00	100.00	20.00	4.20
Lead	69.00	75.40	72.10	128.00	358.00	86.90	55.40	342.00	37.10	420.00	1100.00	115.00	100.00
Mercury	0.12	0.27	0.24	0.21	0.69	0.25	0.23	0.995	0.52	0.42	0.39	0.46	0.32
Selenium	7.40	ND	ND	6.43	7.26	ND	ND	0.26	ND	ND	5.20	6.30	8.40
Silver	ND	ND	ND	ND	2.59	ND	ND	1.58	ND	ND	ND	ND	ND
Zinc	97.00	87.80	94.20	173.00	777.00	153.00	111.00	32.10	61.90	18.00	180.00	110.00	53.00



TABLE 1 (continued)

Alpha Metals, Inc.
Delineation Soil Sampling ResultsTotal Petroleum Hydrocarbons and Priority Pollutant Metals

Sample #	B13-1	B13-2	B14-1	B14-2	B15-1	B15-2	B16-1	B16-2
Sample Depth (feet)	1.5-2.0	2.5-3.0	0.5-1.0	1.5-2.0	1.0-1.5	2.0-2.5	0.5-1.0	1.5-2.0
Sample Date	7-23-91	7-23-91	7-23-91	7-23-91	7-23-91	7-23-91	7-26-91	7-25-91
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TPHC (ppm)	54	132	601	233	3662	5361	1396	832

Priority Pollutant Metals (ppm)

Antimony	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	1.10	0.99	1.10	ND	ND	ND	1.46	1.50
Chromium	7.90	4.40	14.00	29.00	11.00	12.00	9.22	13.00
Lead	730.00	99.00	35.00	85.00	42.00	79.00	3.83	49.00
Mercury	0.53	0.14	0.27	0.49	0.21	0.28	0.50	0.38
Selenium	14.00	5.90	ND	ND	ND	8.90	6.79	7.80
Silver	ND	ND	ND	ND	ND	ND	3.40	ND
Zinc	120.00	79.00	53.00	75.00	110.00	110.00	31.50	580.00

Notes:

TPHC - Total petroleum hydrocarbons

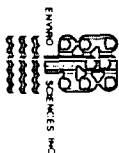
ppm - Parts per million

Dup - Duplicate sample

NA - Not analyzed

ND - Not detected

(MT91399b)



Arkansas Co. Inc.
(Hummel Co.)

HUMMEL CHEMICAL
185 FOUNDRY STREET
NEWARK, ESSEX COUNTY
EPA ID # NJD002174712

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7. WATER SUPPLY OVERLAY
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- A. DATA SUMMARY FROM OCTOBER, 1988 SITE INSPECTION
- B. PRELIMINARY ASSESSMENT; SEPTEMBER 1987
- C. "DIOXINS", EPA, NOVEMBER, 1980
- D. MEMOS RE: HUMMEL ACTIVITIES IN THE PAST, 1987
- E. LETTER RE: HUMMEL, SOUTH PLAINFIELD; FEBRUARY 1982
- F. "GROUNDWATER RESOURCES OF ESSEX COUNTY", 1968
- G. MEMO RE: SAMPLING PLAN, OCTOBER 1988
- H. MEMO RE: SAMPLING EPISODE REPORT, OCTOBER 1988

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PAGE

14

ATTACHMENT

pp. 1

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[illegible]

SUMMARY OF SAMPLING DATA
METALS

PAGE 16 OF 16

DATE SAMPLED 11-14-88

SAMPLE NO.

MATRIX

UNITS ppm

	S-13	S-14	Sed-2	Sed-3	Sed-4	Sed-5	
Aluminum							
Antimony	145	27.1					
Arsenic	20.3	78.1					
Barium	560	554				468	
Beryllium	1	1.4					
Cadmium	5.2	5.1		4	17.1	12	
Calcium							
Chromium	5360	797	369		209	512	
Cobalt							
Copper	234	342			895	323	
Iron							
Lead	1320	2360		234	482	697	
Magnesium							
Manganese							
Mercury	1.8	5.9	12			3.9	
Nickel			347		668	127	
Potassium							

ELSON T. KILLAM ASSOCIATES INC.

METALS DATA

Sample No: 1124-9001

Lab Sample ID No. 786-1124-9001

	Concentration (mg/L)	Detection Limit (mg/L)
ANTIMONY	0.02	0.02
ARSENIC	0.046	0.005
BERYLLIUM	BDL	0.005
CADMIUM	0.005	0.002
CHROMIUM	0.073	0.005
COPPER	0.12	0.02
LEAD	0.45	0.005
MERCURY	0.0002	0.0002
NICKEL	0.02	0.02
SELENIUM	BDL	0.005
SILVER	BDL	0.01
THALLIUM	0.02	0.01
ZINC	0.054	0.005

BDL = BELOW DETECTION LIMIT

MAACC0156

THE ARKANSAS COMPANY, INC. *Specialty Chemicals since 1903*

156 FOUNDRY STREET, NEWARK, NEW JERSEY 07102

TELEPHONE 901-660-0100 TBLBX 13Beso .CA..LB A.-KA.NCHBM

- March 30, 1981 13 ~ 2 77 J

Mr. Frank P. D'Ascensio,
Superintendent of Industrial Waste Control Passaic Valley Sewerage Commissioners 600 Wilson
Avenue
Newark, New Jersey 07105

Dear Sir:

On March 25, 1981 we received a letter saying that "our company
has been identified by PVSC as an actual or potential discharger
of mercury" Arkansas Co., Inc. , does not produce any products con- taining mercury. It also
does not purchase any raw materials that contain mercury.

The analysis of a composite. sample of discharge waste showed no mercury. This analysis was
used as a basis by PVSC to assess a figure for BOD and COD treatments.

Based upon the foregoing statements and analysis, Arkansas Co., Inc. feels that it is exempt
from your request of two (2) composite sample analysis for each month for a period of three (3)
months.

Very truly yours,

ARKANSAS COMPANY, INC.

..1/t, .J&1 ~ :

George B. Reitz \ 1-.. ~ " ' ~

President PY'-'. - ~ ~ \ t M, AAOO014'3 GBR/id .) ~ ~ . ~ ~ . j. . t' } ~
/r; dustr-epa.kNoord 8. B.2700 -1J ~ ~

35, rue Edm Toïenaere, B.1020 Sint-Niklaas, Belgium ~ Brussels, Belgium
Telephone (031) 76.49.59 Arkansas IJropes.a. Telephona(O2)427.7100

PASSAIC VALLEY SEWERAGE COMMISSION
NEWARK, NEW JERSEY

HEAVY METALS SOURCE DETERMINATION STUDY

IN COMPLIANCE WITH COASTAL DUMPING PERMIT
NO. 11 NJ003 INTERIM SECTION 9.0

Passaic Valley Sewerage Commissioners

JOSEPH M. KEEGAN	- Chairman
BEN W. GORDON	- Vice Chairman
THOMAS J. CIFELLI	- Commissioner
VINCENT CORRADO	- Commissioner
ROBERT J. DAVENPORT	- Commissioner
RICHARD M. GIACOMARRO	- Commissioner
CHARLES A. LAGOS	- Commissioner
CARMINE T. PERRAPATO	- Executive Director
ROCCO D. RICCI	- Chief Engineer

PHASE II

APRIL 1980

000000

Elson T. Killam Associates, Inc.

Environmental and Hydraulic Engineers



PASSAIC VALLEY SEWERAGE COMMISSION - HEAVY METAL SOURCE DETERMINATION
 PHASE II INDUSTRIAL CONTRIBUTION
 SUB-AREA 0

PAGE 1

CONTROL NO.	NAME AND ADDRESS OF INDUSTRY	FLOW GPD	TOTAL CADMIUM LBS/DAY (MG/L)	TOTAL CHROMIUM LBS/DAY (MG/L)	TOTAL COPPER LBS/DAY (MG/L)	TOTAL LEAD LBS/DAY (MG/L)	TOTAL NICKEL LBS/DAY (MG/L)	TOTAL ZINC LBS/DAY (MG/L)	TOTAL ARSENIC LBS/DAY (MG/L)	TOTAL MERCURY LBS/DAY (MG/L)
390	CHARLES BRESLER CO. 219 SOUTH 10TH ST. EAST ORANGE	0.0040	0.000 (0.012)	0.281 (8.420)	0.012 (0.359)	0.001 (0.022)	0.001 (0.038)	0.006 (0.166)	0.000 (0.001)	0.0000 (0.001)
920	A & L BYERS INC. 36 SHARON ST. NEWARK	0.0150	0.001 (0.005)	0.005 (0.038)	0.014 (0.108)	0.003 (0.020)	0.001 (0.007)	0.011 (0.087)	0.000 (0.001)	0.0000 (0.000)
925	AKUL CHEMICAL ROTHENBURG ST. NEWARK	0.0020	0.000 (0.008)	0.002 (0.090)	0.004 (0.220)	0.001 (0.030)	0.000 (0.010)	0.007 (0.410)	0.000 (0.001)	0.0001 (0.005)
930	ALLIANCE CHEMICAL INC. 33 AVE. F NEWARK	0.1170	0.027 (0.028)	0.309 (0.317)	0.418 (0.428)	0.701 (0.718)	0.758 (0.754)	653.772 (670.000)	0.001 (0.001)	0.0024 (0.002)
940	ALL PLATING & CASTING INC. 589 FERRY ST. NEWARK	0.0190	0.015 (0.093)	0.014 (0.091)	1.348 (8.510)	0.003 (0.022)	0.472 (2.980)	0.056 (0.351)	0.039 (0.245)	0.0001 (0.001)
950	ANODIZING CORP. 39 AVE. L NEWARK	0.0090	0.000 (0.005)	0.124 (1.650)	0.010 (0.135)	0.021 (0.282)	0.001 (0.011)	0.005 (0.066)	0.000 (0.001)	0.0003 (0.003)
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955	ARUL CHEMICAL PRODUCTS CO. 649 FERRY ST. NEWARK	0.0001	0.000 (0.005)	0.000 (0.005)	0.000 (0.008)	0.000 (0.005)	0.000 (0.005)	0.000 (0.014)	0.000 (0.001)	0.0000 (0.000)
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51

COMPUTER OUTPUT
 111013810

HUMMEL CHEMICAL
AKA 185 FOUNDRY STREET SITE
185 FOUNDRY STREET
NEWARK, ESSEX COUNTY
EPA ID # NJD002174712

GENERAL INFORMATION AND SITE HISTORY

The Hummel Chemical Company formerly operated a chemical warehouse/distribution center out of a small industrial complex from the mid-1950s to the mid-1960s. Operations ceased here in the mid-1960s when the company relocated to South Plainfield, New Jersey. The former site is situated in a heavily industrialized section of Newark with the nearest residential area being located 0.5 mile to the west.

Records show that Hummel leased property at 185 Foundry Street from Norpak/Kem Realty Company in the mid 1960's. The exact building that Hummel occupied cannot be verified; however, company officials speculate that it was building #18.

The entire Foundry Street Complex has a long history of occupancy by a variety of chemical related industries dating back to a least 1931. In the early 1930's H.A. Metz Laboratories manufactured unspecified drugs here while the northeastern portion of the site remained undeveloped. In the 1950s, at least two industries, Chemical Industries Inc. and the Arkansas Chemical Company occupied the site. The type of operations that Chemical Industries Inc. was involved in is unknown; however, they may have leased some portions of their property to other chemical companys. Arkansas Chemical manufactured textile related chemicals in the extreme southern portion of the site until 1982. Other past operators include Cellomar, a Division of Polychrome Inc. and Diamond Shamrock. The dates these companies operated here and types of operations are unknown.

Current operators at the Foundry Street Complex include: Sun Chemical Company, Avon Drum Company, Fleet Auto Electric, Automatic Electroplating, Conus Chemical Company and CWC Industries.

SITE OPERATIONS OF CONCERN

Hummel Chemical operated a chemical warehouse/distribution center for wholesaling chemicals out of their Foundry Street, Newark location. Although little information is available as to the exact operations here, it is likely that they included the reacting and mixing of chemicals, most of which were in the powdered form.

According to the EPA publication, "Dioxins", published in 1980, several class III dioxin precursors were present at the Newark location. These chemicals include: 2,4-dinitrophenoxyethanol, 3,5-dinitrosalicylic acid, hexachlorobenzene and picric acid. The identity of additional chemicals present or what types of storage/disposal methods used by the company are unknown.

The company has a history of poor housekeeping and operational practices associated with their South Plainfield facility that may have also occurred at the prior operational facility in Newark.

Hummel possessed no state or federal permits for discharges to the environment from their Newark facility.

During an October 7, 1988 Presampling Assessment (PSA) conducted by New Jersey Department of Environmental Protection (NJDEP), Bureau of Planning and Assessment (BPA) personnel, most of the exposed soil surface at the site appeared to be stained and saturated with chemicals. Pools of multi-colored chemicals were observed as well as drums of hazardous substances, many of which were leaking and stored in insecure areas which lacked secondary containment. For most industries within the complex, poor housekeeping practices seemed to be routine.

Because a variety of chemical companies have operated here since Hummel moved in the 1960s, it is unlikely that current conditions can be attributed to Hummel.

GROUNDWATER ROUTE

Groundwater beneath the site is derived from a two aquifer system. Directly underlying the site is a low yield aquifer consisting of unstratified drift of the Pleistocene age. During a, October 14, 1988, NJDEP Site Investigation (SI), groundwater in this aquifer was encountered at 8.5 feet. The groundwater flow in this shallow unconfined aquifer is assumed to be east, southeast towards the Passaic River and Newark Bay. The Triassic Brunswick Formation, which consists of dull red shale interbedded with siltstone and occasional layers of sandstone, is found beneath the unstratified drift. The formation is relatively deep and protected in much of the area by confining clay layers; however, moderate permeability is possible due to extensive fracturing. Because cracks in the sedimentary rocks of the Triassic Age intersect one another at many different angles, water can move in any direction.

Two monitoring wells were sampled during the October 14, 1988, NJDEP SI. Monitoring Wells 1 and 2 are located on the former Hummel-Lanolin (not related to Hummel Chemical) property within 50 feet on one another in order to monitor a former underground storage tank. Monitoring Well 1 is 10.5 feet deep while Monitoring Well 2 is 10.7 feet deep with both wells tapping the shallow unstratified drift-aquifer. Because of the extremely slow recharge rate of the groundwater in this area, the monitoring well samples were analyzed only for Volatile Organic Compounds (VOCs) and metals out of the planned Target Compound List (TCL) plus 30 peaks.

The following table represents the significant monitoring well results:
(note: all results in ppb)

	MW-1 (PPB)	MW-2 (PPB)
benzene	6	4
arsenic	2020	
barium	2200	
cadmium	1530	34.9
copper	2660	
lead	20400	127
mercury	4.2	77.1
zinc	51500	84600

There are numerous industrial wells within a three mile radius that tap the Brunswick Formation, however, groundwater is not used as a potable supply source in the area. Hummel has never possessed any permits or been issued violations for discharges to the groundwater associated with the former Newark facility.

SURFACE WATER ROUTE

The Foundry Street Complex consists of buildings that are in close proximity to each other, separated only by small alleyways. These alleyways run throughout the site and are bisected by common storm drains, which receive stormwater runoff and, in some cases, direct discharges from the various industries. Because the industrial complex is so old, it is not known which, if any, of the storm drains are connected to the Passaic Valley Sewage Authority (PVSA). Any discharges or drains that are not connected would most likely discharge into the nearby Passaic River.

The confluence of the Passaic River, Hackensack River and Newark Bay lies approximately 3000 feet to the east of Foundry Street Complex. These waterways are used for industrial, recreational and commercial purposes.

During the October 14, 1988, NJDEP SI, four surface water and five sediment samples were collected from the storm drains and analyzed for the TCL plus 30 peaks. Numerous contaminants were detected at varying concentrations in both the surface water and sediment samples. Table 1 summarizes the significant results. (note: all results in ppb with the exception of the non-aqueous inorganics which are reported in ppm) See Map 2 for sample locations and Attachment A for sample descriptions.

Because Hummel has not operated here for 25 years, the contamination detected in these samples cannot accurately be connected to their prior operations.

AIR ROUTE

Hummel did not possess any permits or receive any violations for releases to the air from the Newark facility. Since their operations in Newark ceased in the mid-1960s there is currently no potential for contamination of the air; however, migration of air-borne contaminants in the past cannot be ruled out.

During the October 14, 1988, NJDEP SI, ambient air readings of up to 40 ppm as isobutylene on the HNu and over 10 ppm as methane on the OVA were observed. This would indicate that current operations may be contributing to air pollution.

SOIL

On October 14, 1988, NJDEP, BPA collected 15 soil samples to be analyzed for the TCL plus 30 peaks and 5 to be analyzed for the 2,3,7,8-TCDD isomer of dioxin. Although dioxin was not detected in any of the samples, this does not guarantee that it is not present on site. See Map 2 for sample locations and Attachment A for sample descriptions. Table 2 summarizes the significant results.

During the same inspection, the ground surface was observed to be stained throughout the site from chemical spills. Leaking drums with no secondary containment were also noted.

Because of the presence of a variety of chemical companies over the years, it is not likely that any present soil contamination can be attributed to the former Hummel facility.

DIRECT CONTACT

There have been no reported incidents of direct contact in relation to the Hummel operations at this location; however, there is currently a potential for direct contact with contaminated soil due to the absence of 24-hour barriers.

FIRE AND EXPLOSION

There have been no reported fires or explosions directly associated with the Hummel, Newark operations; however, Newark Fire Department personnel recall responding to fires and chemical spills at the Foundry Street Complex but could not recall if any were at the Hummel facility.

ADDITIONAL CONSIDERATIONS

The presence of many bioaccumulative and biomagnification threats such as pesticides, PCBs, mercury, cadmium, and lead in the surface water and soil leads to a potential to damage the flora and fauna and subsequently adversely affecting the food chain. The aquatic ecosystem of the Passaic River, which receives the drainage discharges, would be most immediately affected.

ENFORCEMENT ACTIONS

There are no records of enforcement actions taken against the Hummel, Newark facility.

PRIORITY DESIGNATION

Because damage to human health or the environment is not likely due to the location of the site in a highly industrialized area, a low priority is assigned.

RECOMMENDATIONS

Further investigation of the current operators at the Foundry Street Complex is indicated by the levels of contaminants detected during the October 14, 1988 NJDEP SI. A Responsible Party (RP) search is necessary due to the number of tenants and owners over the years. Following completion of the RP search, the case should be transferred to Case Management for initiation of clean-up activities.

A delineation of the storm drain system should be performed and, if necessary, hook up to the PVSA should be completed.

Submitted by:

Elizabeth Torpey
December, 1989

Site Investigation Report

**The Arkansas Company
185 Foundry Street
Newark, NJ**

Prepared for

**The City of Newark
Department of Engineering
920 Broad Street
Newark, NJ 07102**

Prepared By

**Metcalf & Eddy, Inc.
PO Box 1500
Somerville, NJ 08876
M&E Project # 018237-0001**

February, 1997

TABLE 2
ANALYTICAL SUMMARY OF SOIL, RESIDUE, AND SLUDGE SAMPLES
ARKANSAS CHEMICAL CO.
NEWARK, NEW JERSEY

Sample ID	Residential	Non-Residential	Impact to	AK-01	AK-02	AK-03	AK-04	AK-05	AK-06	AK-07
Lab Sample Number	Direct Contact	Direct Contact	Groundwater	31387	31388	31389	31390	31391	31392	31393
Sampling Date	Soil Cleanup	Soil Cleanup	Soil Cleanup	10/03/95	10/03/95	10/03/95	10/03/95	10/03/95	10/03/95	10/03/95
Dilution Factor	Criteria (ug/kg) (1)	Criteria (ug/kg) (2)	Criteria (ug/kg) (3)	1.0	100.0	100.0	1.0	1.0	1.0	1.0
PCB 1018 *	490	2,000	50,000	600 U	850 U	1600 U	360 U	NA	NA	77 U
PCB 1221 *	490	2,000	50,000	800 U	850 U	1600 U	360 U	NA	NA	77 U
PCB 1232 *	490	2,000	50,000	600 U	850 U	1600 U	360 U	NA	NA	77 U
PCB 1242 *	490	2,000	50,000	600 U	850 U	1600 U	360 U	NA	NA	77 U
PCB 1248 *	490	2,000	50,000	3000	4200	7800	1800	NA	NA	160 U
PCB 1254 *	490	2,000	50,000	1400 U	1700 U	3800 U	1200 U	NA	NA	77 U
PCB 1260 *	490	2,000	50,000	190 U	350 U	480 U	220 U	NA	NA	77 U
METALS (mg/kg)										
Antimony	14	340	NC	22.7	11.3	30.7	3.4	NA	NA	0.47 U
Arsenic	20	20	NC	45.8	43.0	79.7	12.7	NA	NA	3.8
Beryllium	1	1	NC	0.42	0.46	0.59	0.29	NA	NA	0.23
Cadmium	1	100	NC	9.1	5.4	13.9	3.3	NA	NA	1.7
Chromium	NC	NC	NC	183	115	480	70.7	NA	NA	13.2
Copper	600	600	NC	240	152	424	255	NA	NA	17.0
Lead	400(4)	600	NC	1160	887	1780	550	NA	NA	344
Mercury	14	270	NC	2.1	2.1	3.6	1.2	NA	NA	0.60
Nickel	25	2400	NC	108	78.0	208	82.9	NA	NA	9.6
Selenium	83	3100	NC	1.2	4.1	1.8	1.8	NA	NA	0.71
Silver	110	4100	NC	1.8	1.00	2.4	0.62	NA	NA	0.092 U
Thallium	2	2	NC	4.9 U	2.3 U	10.9 U	1.1 U	NA	NA	2.5 U
Zinc	1500	1500	NC	2780	1800	5350	847	NA	NA	1180
WET CHEM TESTS										
Total Petroleum Hydrocarbons (ppm)	10,000 ppm (5)	10,000 ppm	10,000 ppm	NA	NA	NA	NA	1150	1820	NA
pH (std units)	NC	NC	NC	NA	NA	NA	NA	NA	NA	NA

NOTES

mg/kg = milligrams per kilogram (parts per million - PPM)

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Shaded detection indicates compound detection limit exceeded one or more of the cleanup criteria.

* Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.

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* Values listed reflect the combined standards for "Total PCBs"

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NEWARK, NEW JERSEY

Sample ID	Residential	Non-Residential	Impact to	AK-08	AK-09	AK-10	AK-11	AK-16	AK-17	AK-18
Lab Sample Number	Direct Contact	Direct Contact	Groundwater	31394	31395	31396	31397	31486	31487	31488
Sampling Date	Soil Cleanup	Soil Cleanup	Soil Cleanup	10/03/95	10/03/95	10/03/95	10/03/95	10/04/95	10/04/95	10/04/95
Dilution Factor	Criteria (ug/kg) (1)	Criteria (ug/kg) (2)	Criteria (ug/kg) (3)	1.0	1.0	1.0	1.0	50.0	1.0	50.0
PCB 1018 *	400	2,000	50,000	NA	NA	NA	80 U	NA	NA	810 U
PCB 1221 *	400	2,000	50,000	NA	NA	NA	75 U	NA	NA	810 U
PCB 1232 *	400	2,000	50,000	NA	NA	NA	180 U	NA	NA	810 U
PCB 1242 *	400	2,000	50,000	NA	NA	NA	95 U	NA	NA	810 U
PCB 1248 *	400	2,000	50,000	NA	NA	NA	80 U	NA	NA	3000
PCB 1254 *	400	2,000	50,000	NA	NA	NA	120 U	NA	NA	2000 U
PCB 1280 *	400	2,000	50,000	NA	NA	NA	90 U	NA	NA	1300 U
METALS (mg/kg)										
Antimony	14	340	NC	NA	NA	NA	10.5	5.8	16.6	31.2
Arsenic	20	20	NC	NA	NA	NA	12.7	5.0	15.9	90.5
Beryllium	1	1	NC	NA	NA	NA	0.13 U	0.16	0.24	0.46 U
Cadmium	1	100	NC	NA	NA	NA	1.7	2.1	19.7	28.7
Chromium	NC	NC	NC	NA	NA	NA	1770	409	251	153
Copper	600	600	NC	NA	NA	NA	99.3	145	272	483
Lead	400(4)	600	NC	NA	NA	NA	143	145	2240	1620
Mercury	14	270	NC	NA	NA	NA	3.1	1.6	1.1	1.5
Nickel	25	2400	NC	NA	NA	NA	412	902	175	181
Selenium	63	3100	NC	NA	NA	NA	1.8	0.82	1.2	15.9
Silver	110	4100	NC	NA	NA	NA	0.36 U	0.26 U	1.9	1.2 U
Thallium	2	2	NC	NA	NA	NA	0.26 U	0.37 U	0.25 U	0.70 U
Zinc	1500	1500	NC	NA	NA	NA	351	1720	23500	38800
WET CHEM TESTS										
Total Petroleum Hydrocarbons (ppm)	10,000 ppm (5)	10,000 ppm	10,000 ppm	312	262	293	NA	1010	30500	11600
pH (std units)	NC	NC	NC	NA	NA	NA	NA	NA	NA	NA

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* Values listed reflect the combined standards for "Total PCBs"

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ANALYTICAL SUMMARY OF SOIL, RESIDUE, AND SLUDGE SAMPLES
ARKANSAS CHEMICAL CO.
NEWARK, NEW JERSEY

Sample ID Lab Sample Number Sampling Date Dilution Factor	New Jersey Residential Soil Cleanup Criteria (ug/kg)	New Jersey Non-Residential Soil Cleanup Criteria (ug/kg)	New Jersey Impact to Ground Water Soil Cleanup Criteria (ug/kg)	AK-23a 55994 07/18/96 10.0	AK-24 55995 07/18/96 5.0	AK-25 55996 07/18/96 20.0	AK-26 55997 07/18/96 2.0	AK-27 55998 07/18/96 10.0	AK-28 55999 07/18/96 20.0	AK-29 56000 07/18/96 10.0
Aroclor - 1016 *	490	2,000	50,000	100 U	110 U	88 U	85 U	93 U	94 U	100 U
Aroclor - 1221 *	490	2,000	50,000	100 U	110 U	88 U	85 U	93 U	94 U	100 U
Aroclor - 1232 *	490	2,000	50,000	100 U	110 U	88 U	85 U	93 U	94 U	100 U
Aroclor - 1242 *	490	2,000	50,000	100 U	110 U	88 U	85 U	93 U	94 U	100 U
Aroclor - 1248 *	490	2,000	50,000	100 U	110 U	88 U	85 U	93 U	94 U	100 U
Aroclor - 1254 *	490	2,000	50,000	270	110 U	88 U	85 U	93 U	94 U	100 U
Aroclor - 1260 *	490	2,000	50,000	100 U	110 U	88 U	85 U	93 U	94 U	100 U
METALS (ug/kg)										
Antimony	14	340	NC	3.9	1.2	1.2	0.91 U	2.2	2.8	2.8
Arsenic	20	20	NC	13.4	3.9	3.3	3.4	6.3	9.7	8.3
Beryllium	1	1	NC	0.49	1.0	0.17	0.16	0.17	0.41	0.36
Cadmium	1	100	NC	3.6	0.61	1.0	1.6	1.3	1.7	2.0
Chromium	NC	NC	NC	188	13.5	23.8	72.5	45.5	62.8	125
Copper	600	600	NC	88.9	52.9	82.1	132	2000	516	181
Lead	400(4)	600	NC	359	111	135	103	894	563	449
Mercury	14	270	NC	6.5	1.4	0.93	0.52	1.0	2.0	1.9
Nickel	250	2400	NC	40.9	13.3	27.8	50.3	1040	252	424
Selenium	63	3100	NC	1.2 U	1.9	1.1 U	1.2	1.2 U	1.2 U	1.3 U
Silver	110	4100	NC	0.38 U	0.39 U	0.31 U	0.30 U	8.4	0.86	0.70
Thallium	2	2	NC	1.4 U	1.5 U	1.2 U	1.2 U	1.3 U	1.3 U	1.5 U
Zinc	1500	1500	NC	650	189	311	360	582	567	528
WET CHEM TESTS (mg/kg)										
Total Petroleum Hydrocarbons	10,000 ppm(5)	10,000 ppm	10,000 ppm	7170	NA	NA	NA	NA	NA	NA

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NEWARK, NEW JERSEY

Sample ID	Residential	Non-Residential	Impact to	AK-19	AK-20	AK-21	AK-23	Field_Blank	Trip_Blank	Trip_Blank
Lab Sample Number	Direct Contact	Direct Contact	Groundwater	31489	31490	31491	31493	31494	31495	31400
Sampling Date	Soil Cleanup	Soil Cleanup	Soil Cleanup	10/04/95	10/04/95	10/04/95	10/04/95	10/04/95	10/02/95	10/02/95
Dilution Factor	Criteria (ug/kg) (1)	Criteria (ug/kg) (2)	Criteria (ug/kg) (3)	1.0	500.0	1.0		1.0	1.0	1.0
PCB 1016 *	490	2,000	50,000	NA	NA	NA	NA	NA	NA	NA
PCB 1221 *	490	2,000	50,000	NA	NA	NA	NA	NA	NA	NA
PCB 1232 *	490	2,000	50,000	NA	NA	NA	NA	NA	NA	NA
PCB 1242 *	490	2,000	50,000	NA	NA	NA	NA	NA	NA	NA
PCB 1248 *	490	2,000	50,000	NA	NA	NA	NA	NA	NA	NA
PCB 1254 *	490	2,000	50,000	NA	NA	NA	NA	NA	NA	NA
PCB 1260 *	490	2,000	50,000	NA	NA	NA	NA	NA	NA	NA
METALS (mg/kg)										
Antimony	14	340	NC	19.3	25.4	8.9	NA	NA	NA	NA
Arsenic	20	20	NC	67.5	29.0	9.9	NA	NA	NA	NA
Beryllium	1	1	NC	0.22 U	0.19 U	0.11 U	NA	NA	NA	NA
Cadmium	1	100	NC	0.22 U	8.8	3.4	NA	NA	NA	NA
Chromium	NC	NC	NC	3460	431	691	NA	NA	NA	NA
Copper	600	600	NC	665	219	125	NA	NA	NA	NA
Lead	400(4)	600	NC	592	2310	4430	NA	NA	NA	NA
Mercury	14	270	NC	5.5	1.8	0.19	NA	NA	NA	NA
Nickel	25	2400	NC	3120	71.6	71.1	NA	NA	NA	NA
Selenium	63	3100	NC	10.6	8.4	0.90 U	NA	NA	NA	NA
Silver	110	4100	NC	0.60 U	1.5	0.30 U	NA	NA	NA	NA
Thallium	2	2	NC	0.36	0.30 U	0.29 U	NA	NA	NA	NA
Zinc	1500	1500	NC	850	27100	5610	NA	NA	NA	NA
WET CHEM TESTS										
Total Petroleum Hydrocarbons (ppm)	10,000 ppm (5)	10,000 ppm	10,000 ppm	523	5370	NA	117000	NA	NA	NA
pH (std units)	NC	NC	NC	NA	NA	9.66	NA	NA	NA	NA

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* Values listed reflect the combined standards for Total PCBs*

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Sample ID	New Jersey Residential	New Jersey Non-Residential	New Jersey Impact to Ground Water	AK-30	AK-31	AK-32	AK-33	AK-34	AK-35	AK-36
Lab Sample Number	56001	56002	56003	56004	56005	56006	56007	56008	56009	56010
Sampling Date	07/18/96	07/18/96	07/18/96	07/18/96	07/18/96	07/18/96	07/18/96	07/18/96	07/18/96	07/18/96
Dilution Factor	20.0	2.0	5.0	5.0	5.0	50.0	5.0	5.0	5.0	5.0
Criteria (ug/kg)	400	2,000	50,000	92 U	88 U	89 U	110 U	100 U	140 U	110 U
Aroclor-1016 *	400	2,000	50,000	92 U	88 U	89 U	110 U	100 U	140 U	110 U
Aroclor-1221 *	400	2,000	50,000	92 U	88 U	89 U	110 U	100 U	140 U	110 U
Aroclor-1232 *	400	2,000	50,000	92 U	88 U	89 U	110 U	100 U	140 U	110 U
Aroclor-1242 *	400	2,000	50,000	92 U	88 U	89 U	110 U	100 U	140 U	110 U
Aroclor-1248 *	400	2,000	50,000	92 U	88 U	130 U	660	100 U	1100	330 U
Aroclor-1254 *	400	2,000	50,000	92 U	88 U	89 U	170 U	100 U	350 U	220 U
Aroclor-1260 *	400	2,000	50,000	92 U	88 U	89 U	170 U	100 U	350 U	110 U
METALS (ug/kg)										
Antimony	14	340	NC	2.2	3.9	2.1	3.0	4.6	5.3	4.2
Arsenic	20	20	NC	9.0	15.1	11.4	31.8	13.6	18.3	25.0
Beryllium	1	1	NC	0.40	0.25	0.34	0.33	0.30	0.23	0.23
Cadmium	1	100	NC	2.0	1.9	1.2	3.5	3.1	2.1	1.6
Chromium	NC	NC	NC	42.8	57.5	20.7	51.3	56.0	46.4	53.2
Copper	600	600	NC	154	121	86.6	135	207	120	136
Lead	400(4)	600	NC	476	581	202	582	777	391	491
Mercury	14	270	NC	2.7	1.2	0.49	1.1	1.9	1.4	1.6
Nickel	250	2400	NC	80.1	40.3	30.0	44.7	57.6	37.7	40.5
Selenium	63	3100	NC	1.1 U	1.1	1.1 U	1.8	1.3	1.8 U	2.0
Silver	110	4100	NC	0.63	0.36	0.32 U	0.74	0.55	0.79	0.78
Thallium	2	2	NC	1.3 U	1.2 U	1.2 U	1.6 U	1.4 U	2.0 U	1.5 U
Zinc	1500	1500	NC	528	608	453	1490	1130	725	812
WET CHEM TESTS (mg/kg)										
Total Petroleum Hydrocarbons	10,000 ppm(5)	10,000 ppm	10,000 ppm	NA	NA	2000	2440	NA	NA	NA

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Aroclor-1016 *	400	2,000	50,000	130 U	180 U	170 U	100 U	110 U	110 U
Aroclor-1221 *	400	2,000	50,000	130 U	180 U	170 U	100 U	110 U	110 U
Aroclor-1232 *	400	2,000	50,000	130 U	180 U	170 U	100 U	110 U	110 U
Aroclor-1242 *	400	2,000	50,000	130 U	180 U	170 U	100 U	110 U	110 U
Aroclor-1248 *	400	2,000	50,000	1600	520	350 U	100 U	270 U	110 U
Aroclor-1254 *	400	2,000	50,000	950 U	180 U	170 U	100 U	170 U	110 U
Aroclor-1260 *	400	2,000	50,000	130 U	180 U	170 U	100 U	170 U	110 U
METALS (ug/kg)									
Antimony	14	340	NC	6.0	6.2	7.9	6.2	23.0	2.7
Arsenic	20	20	NC	30.7	31.2	20.2	21.9	35.9	17.9
Beryllium	1	1	NC	0.30	0.40	0.51	0.25	0.42	0.63
Cadmium	1	100	NC	2.4	5.8	4.6	0.98	5.4	6.8
Chromium	NC	NC	NC	83.1	68.3	54.3	20.0	117	22.9
Copper	600	600	NC	83.2	97.9	133	179	611	199
Lead	400(4)	600	NC	640	573	734	435	1730	235
Mercury	14	270	NC	1.5	1.4	3.3	0.25	0.80	0.57
Nickel	250	2400	NC	30.9	37.6	62.8	27.3	116	21.8
Selenium	63	3100	NC	1.7 U	2.1 B	2.6	2.4	3.3	2.7
Silver	110	4100	NC	0.66 B	0.71 B	7.1	0.60 B	3.8	0.40
Thallium	2	2	NC	1.9 U	2.2 U	2.4 U	1.5 U	1.5 U	1.5 U
Zinc	1500	1500	NC	1960	1110	895	242	1300	672
WET CHEM TESTS (mg/kg)									
Total Petroleum Hydrocarbons	10,000 ppm(5)	10,000 ppm	10,000 ppm	6360	NA	NA	NA	NA	NA

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Sample ID	New Jersey Residential	New Jersey Non-Residential	New Jersey Impact to Ground Water	AK-23	AK-24	AK-25	AK-26	AK-27	AK-28	AK-29
Lab Sample Number	55004	55005	55006	55007	55008	55009	55000	55000	55000	55000
Sampling Date	07/18/96	07/18/96	07/18/96	07/18/96	07/18/96	07/18/96	07/18/96	07/18/96	07/18/96	07/18/96
Dilution Factor	10.0	5.0	20.0	2.0	10.0	20.0	10.0	20.0	10.0	10.0
Criteria (ug/kg)	400	2,000	50,000	100 U	110 U	88 U	85 U	93 U	94 U	100 L
Aroclor-1018 *	400	2,000	50,000	100 U	110 U	88 U	85 U	93 U	94 U	100 L
Aroclor-1221 *	400	2,000	50,000	100 U	110 U	88 U	85 U	93 U	94 U	100 L
Aroclor-1232 *	400	2,000	50,000	100 U	110 U	88 U	85 U	93 U	94 U	100 L
Aroclor-1242 *	400	2,000	50,000	100 U	110 U	88 U	85 U	93 U	94 U	100 L
Aroclor-1248 *	400	2,000	50,000	100 U	110 U	88 U	85 U	93 U	94 U	100 L
Aroclor-1254 *	400	2,000	50,000	270	110 U	88 U	85 U	93 U	94 U	100 L
Aroclor-1260 *	400	2,000	50,000	100 U	110 U	88 U	85 U	93 U	94 U	100 L
METALS (ug/kg)										
Antimony	14	340	NC	3.9	1.2	1.2	0.91 U	2.2	2.8	2.8
Arsenic	20	20	NC	13.4	3.9	3.3	3.4	6.3	9.7	8.3
Beryllium	1	1	NC	0.49	1.0	0.17	0.18	0.17	0.41	0.38
Cadmium	1	100	NC	3.8	0.61	1.0	1.6	1.3	1.7	2.0
Chromium	NC	NC	NC	188	13.5	23.8	72.5	45.5	62.8	125
Copper	800	800	NC	88.9	52.9	82.1	132	2000	516	181
Lead	400(4)	800	NC	359	111	135	103	894	563	449
Mercury	14	270	NC	8.5	1.4	0.93	0.52	1.0	2.0	1.9
Nickel	250	2400	NC	40.9	13.3	27.8	50.3	1040	252	424
Selenium	63	3100	NC	1.2 U	1.9	1.1 U	1.2	1.2 U	1.2 U	1.3 U
Silver	110	4100	NC	0.38 U	0.39 U	0.31 U	0.30 U	8.4	0.88	0.70
Thallium	2	2	NC	1.4 U	1.5 U	1.2 U	1.2 U	1.3 U	1.3 U	1.5 U
Zinc	1500	1500	NC	650	189	311	360	582	567	528
WET CHEM TESTS (mg/kg)										
Total Petroleum Hydrocarbons	10,000 ppm(5)	10,000 ppm	10,000 ppm	7170	NA	NA	NA	NA	NA	NA

NOTES

mg/kg = milligrams per kilogram (parts per million - PPM)

ug/kg = micrograms per kilogram (parts per billion - PPB)

J = Indicates an estimated value below the Method Detection Limit

B = Compound found in associated blank as well as in sample

NA = Not Analyzed

NC = No Criteria

(1) RDC Criteria are based on NJDEP 3 February 1994 Residential Contact Soil Cleanup Criteria.

(2) NRDC Criteria are based on NJDEP 3 February 1994 Non-Residential Contact Soil Cleanup Criteria.

(3) IGW Criteria are based on NJDEP 3 February 1994 Impact to Groundwater Soil Cleanup Criteria.

(4) Revised July 20, 1994

(5) Health based criteria for total organic contaminants, including total petroleum hydrocarbons.

Shaded detection indicates compound detection limit exceeded one or more of the cleanup criteria.

* Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.

* Values listed reflect the combined standards for the 2,4/2,6-Dinitrotoluene mixture.

* Values listed reflect the combined standards for "Total PCBs"

TABLE 2
ANALYTICAL SUMMARY OF SOIL, RESIDUE, AND SLUDGE SAMPLES
ARKANSAS CHEMICAL CO.
NEWARK, NEW JERSEY

Sample ID Lab Sample Number Sampling Date Dilution Factor	New Jersey Residential Soil Cleanup Criteria (ug/kg)	New Jersey Non-Residential Soil Cleanup Criteria (ug/kg)	New Jersey Impact to Ground Water Soil Cleanup Criteria (ug/kg)	AK-30 58001 07/18/96 20.0	AK-31 58002 07/18/96 2.0	AK-32 58003 07/18/96 5.0	AK-33 58004 07/18/96 5.0	AK-34 58005 07/18/96 5.0	AK-35 58006 07/18/96 50.0	AK-36 58007 07/18/96 5.0
Aroclor-1018 *	400	2,000	50,000	92 U	88 U	89 U	110 U	100 U	140 U	110 U
Aroclor-1221 *	400	2,000	50,000	92 U	88 U	89 U	110 U	100 U	140 U	110 U
Aroclor-1232 *	400	2,000	50,000	92 U	88 U	89 U	110 U	100 U	140 U	110 U
Aroclor-1242 *	400	2,000	50,000	92 U	88 U	89 U	110 U	100 U	140 U	110 U
Aroclor-1248 *	400	2,000	50,000	92 U	88 U	130 U	660	100 U	1100	330 U
Aroclor-1254 *	400	2,000	50,000	92 U	88 U	89 U	170 U	100 U	350 U	220 U
Aroclor-1260 *	400	2,000	50,000	92 U	88 U	89 U	170 U	100 U	350 U	110 U
METALS (ug/kg)										
Antimony	14	340	NC	2.2	3.9	2.1	3.0	4.6	5.3	4.2
Arsenic	20	20	NC	9.0	15.1	11.4	31.8	13.6	18.3	25.0
Beryllium	1	1	NC	0.40	0.25	0.34	0.33	0.30	0.23	0.23
Cadmium	1	100	NC	2.0	1.9	1.2	3.5	3.1	2.1	1.6
Chromium	NC	NC	NC	42.8	57.5	20.7	51.3	56.0	46.4	53.2
Copper	600	600	NC	154	121	88.8	135	207	120	136
Lead	400(4)	800	NC	476	581	202	582	777	391	491
Mercury	14	270	NC	2.7	1.2	0.49	1.1	1.9	1.4	1.6
Nickel	250	2400	NC	80.1	40.3	30.0	44.7	57.6	37.7	40.5
Selenium	63	3100	NC	1.1 U	1.1	1.1 U	1.8	1.3	1.8 U	2.0
Silver	110	4100	NC	0.63	0.36	0.32 U	0.74	0.55	0.79	0.78
Thallium	2	2	NC	1.3 U	1.2 U	1.2 U	1.6 U	1.4 U	2.0 U	1.5 U
Zinc	1500	1500	NC	528	608	453	1490	1130	725	612
WET CHEM TESTS (mg/kg)										
Total Petroleum Hydrocarbons	10,000 ppm(5)	10,000 ppm	10,000 ppm	NA	NA	2000	2440	NA	NA	NA

NOTES

mg/kg = milligrams per kilogram (parts per million - PPM)

ug/kg = micrograms per kilogram (parts per billion - PPB)

J = Indicates an estimated value below the Method Detection Limit

B = Compound found in associated blank as well as in sample

NA = Not Analyzed

NC = No Criteria

(1) RDC Criteria are based on NJDEP 3 February 1994 Residential Contact Soil Cleanup Criteria.

(2) NRDC Criteria are based on NJDEP 3 February 1994 Non-Residential Contact Soil Cleanup Criteria.

(3) IGW Criteria are based on NJDEP 3 February 1994 Impact to Groundwater Soil Cleanup Criteria.

(4) Revised July 20, 1994

(5) Health based criteria for total organic contaminants, including total petroleum hydrocarbons.

Shaded detection indicates compound detection limit exceeded one or more of the cleanup criteria.

* Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropane.

* Values listed reflect the combined standards for the 2,4/2,6-Dinitrotoluene mixture.

* Values listed reflect the combined standards for "Total PCBs"

TABLE 2
ANALYTICAL SUMMARY OF SOIL, RESIDUE, AND SLUDGE SAMPLES
ARKANSAS CHEMICAL CO.
NEWARK, NEW JERSEY

Sample ID Lab Sample Number Sampling Date Dilution Factor	New Jersey Residential Soil Cleanup Criteria (ug/kg)	New Jersey Non-Residential Soil Cleanup Criteria (ug/kg)	New Jersey Impact to Ground Water Soil Cleanup Criteria (ug/kg)	AK-37 56008 07/18/98 10.0	AK-38 56009 07/18/98 20.0	AK-39 56010 07/18/98 10.0	AK-40 56011 07/18/98 10.0	AK-41 56012 07/18/98 5.0	AK-42 56013 07/18/98 5.0
Aroclor-1018 *	490	2,000	50,000	130 U	180 U	170 U	100 U	110 U	110 U
Aroclor-1221 *	490	2,000	50,000	130 U	180 U	170 U	100 U	110 U	110 U
Aroclor-1232 *	490	2,000	50,000	130 U	180 U	170 U	100 U	110 U	110 U
Aroclor-1242 *	490	2,000	50,000	130 U	180 U	170 U	100 U	110 U	110 U
Aroclor-1248 *	490	2,000	50,000	1800	520	350 U	100 U	270 U	110 U
Aroclor-1254 *	490	2,000	50,000	950 U	180 U	170 U	100 U	170 U	110 U
Aroclor-1260 *	490	2,000	50,000	130 U	180 U	170 U	100 U	170 U	110 U
METALS (ug/kg)									
Antimony	14	340	NC	8.0	8.2	7.0	6.2	23.0	2.7
Arsenic	20	20	NC	30.7	31.2	20.2	21.9	35.9	17.9
Beryllium	1	1	NC	0.30	0.40	0.51	0.25	0.42	0.63
Cadmium	1	100	NC	2.4	5.8	4.0	0.98	5.4	6.8
Chromium	NC	NC	NC	83.1	88.3	54.3	20.0	117	22.9
Copper	600	600	NC	83.2	97.9	133	170	611	109
Lead	400(4)	600	NC	640	573	734	435	1730	235
Mercury	14	270	NC	1.5	1.4	3.3	0.25	0.80	0.57
Nickel	250	2400	NC	30.9	37.8	62.8	27.3	116	21.8
Selenium	83	3100	NC	1.7 U	2.1 B	2.6	2.4	3.3	2.7
Silver	110	4100	NC	0.68 B	0.71 B	7.1	0.60 B	3.8	0.40
Thallium	2	2	NC	1.9 U	2.2 U	2.4 U	1.5 U	1.5 U	1.5 U
Zinc	1500	1500	NC	1090	1110	895	242	1300	672
WET CHEM TESTS (mg/kg)									
Total Petroleum Hydrocarbons	10,000 ppm(5)	10,000 ppm	10,000 ppm	6360	NA	NA	NA	NA	NA

NOTES

mg/kg = milligrams per kilogram (parts per million - PPM)

ug/kg = micrograms per kilogram (parts per billion - PPB)

J = Indicates an estimated value below the Method Detection Limit

B = Compound found in associated blank as well as in sample

NA = Not Analyzed

NC = No Criteria

(1) RDC Criteria are based on NJDEP 3 February 1994 Residential Contact Soil Cleanup Criteria.

(2) NRDC Criteria are based on NJDEP 3 February 1994 Non-Residential Contact Soil Cleanup Criteria.

(3) IGW Criteria are based on NJDEP 3 February 1994 Impact to Groundwater Soil Cleanup Criteria.

(4) Revised July 20, 1994

(5) Health based criteria for total organic contaminants, including total petroleum hydrocarbons.

Shaded detection indicates compound detection limit exceeded one or more of the cleanup criteria.

* Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.

* Values listed reflect the combined standards for the 2,4/2,6-Dinitrotoluene mixture.

* Values listed reflect the combined standards for "Total PCBs"

TABLE 4a
ANALYTICAL SUMMARY OF AQUEOUS SAMPLES – 11/08/95
ARKANSAS CHEMICAL CO.
NEWARK, NEW JERSEY

Sample ID		MW-1	MW-2	MW-3	TB110895	FB110895
Lab Sample Number		33964	33965	33966	33962	33963
Sampling Date		11/08/95	11/08/95	11/08/95	11/08/95	11/08/95
Dilution Factor	GQC	1.0	5.0	2.0	1.0	1.0
<u>Metals (ug/L)</u>						
Antimony	20	4.1 U	4.1 U	4.1 U	NR	4.1 U
Arsenic	8	6.1	2640	25.8	NR	1.7 U
Beryllium	20	0.30 U	0.30 U	0.30 U	NR	0.30 U
Cadmium	4	0.30 U	0.30 U	0.30 U	NR	0.30 U
Chromium	100	2.8	13.9	7.0	NR	1.5
Copper	1000	4.4	23.2	13.1	NR	2.9 U
Lead	10	7.1	41.7	31.9	NR	2.4
Mercury	2	0.14	0.18	0.21	NR	0.055 U
Nickel	100	3.0	6.8	22.5	NR	0.90 U
Selenium	50	2.4 U	2.4 U	2.4 U	NR	2.4 U
Silver	NA	0.80 U	0.80 U	0.80 U	NR	0.80 U
Thallium	10	4.4 U	4.4 U	4.4 U	NR	4.4 U
Zinc	5000	19.7	71.9	141	NR	4.6

NOTES

ug/L = micrograms per Liter (parts per billion – PPB)

NA = Not Available

J = Indicates an estimated value below the Method Detection Limit

NR = Not Required

B = Compound found in associated blank as well as in sample

U = Undetected

Shaded detection Indicates compound detection limit exceeded one or more of the cleanup criteria.

* Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.

* Values listed reflect the combined standards for the 2,4/2,6-Dinitrotoluene mixture.

* Values listed reflect the combined standards for "Total PCBs"

GQC – Groundwater Quality Criteria listed in this table are defined as the higher of Practical Quantitation Levels (PQL's) &

Groundwater Quality Criteria in accordance with N.J.A.C. 7:9-6.9(c) and in Table 1 of N.J.A.C. 7:9-6.

TABLE 4b
ANALYTICAL SUMMARY OF AQUEOUS SAMPLES – 02/07/96
ARKANSAS CHEMICAL CO.
NEWARK, NEW JERSEY

Sample ID		MW-1	MW-2	MW-3	FB020796	Trip_Blank
Lab Sample Number		40042	40041	40043	40039	40040
Sampling Date		02/07/96	02/07/96	02/07/96	02/07/96	02/07/96
Dilution Factor	GQC	1.0	20.0	2.0	1.0	1.0
METALS						
Antimony	20	3.6 U	3.6 U	3.6 U	3.6 U	NR
Arsenic	8	3.2 U	2190	15.2	3.2 U	NR
Beryllium	20	0.20 U	0.23	0.20 U	0.20 U	NR
Cadmium	4	0.40 U	0.40 U	0.40 U	0.40 U	NR
Chromium	100	4.3	20.7	3.3	0.90 U	NR
Copper	1000	7.2	51.4	5.2	2.6 U	NR
Lead	10	14.7	79.2	7.8	2.3 U	NR
Mercury	2	0.13	0.28	0.12	0.10 U	NR
Nickel	100	3.5	10.0	13.2	1.1 U	NR
Selenium	50	4.2 U	4.2 U	4.2 U	4.2 U	NR
Silver	NA	1.2 U	1.2 U	1.2 U	1.2 U	NR
Thallium	10	4.7 U	4.7 U	4.7 U	4.7 U	NR
Zinc	5000	39.4	163	47.7	5.5 U	NR
WET CHEM TESTS						
Total Cyanide	NA	0.01 U	0.01 U	0.01 U	0.01 U	NR
Total Phenols	NA	0.05 U	0.05 U	0.07	0.05 U	NR

NOTES

ug/L = micrograms per Liter (parts per billion – PPB)

J = Indicates an estimated value below the Method Detection Limit

B = Compound found in associated blank as well as in sample

Shaded detection indicates compound detection limit exceeded one or more of the cleanup criteria.

* Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.

* Values listed reflect the combined standards for the 2,4/2,6-Dinitrotoluene mixture.

* Values listed reflect the combined standards for "Total PCBs"

GQC–Groundwater Quality Criteria listed in this table are defined as the higher of Practical Quantitation Levels ("PQL"s) & Groundwater Quality Criteria in accordance with N.J.A.C. 7:9–6.9(c) and in Table 1 of N.J.A.C. 7:9–6.

NA = Not Available

NR = Not Required

U = Undetected

TABLE 5
ANALYTICAL SUMMARY OF CONTAINERIZED LIQUIDS
ARKANSAS CHEMICAL CO.
NEWARK, NEW JERSEY

Sample ID	AK-12	AK-22
Lab Sample Number	31398	31492
Sampling Date	10/03/95	10/04/95
Dilution Factor		1.0
VOLATILE COMPOUNDS (ug/kg)		
Chloromethane	NA	0.9 U
Bromomethane	NA	0.3 U
Vinyl Chloride	NA	0.4 U
Chloroethane	NA	1.0 U
Methylene Chloride	NA	1.0 U
Trichlorofluoromethane	NA	0.2 U
1,1-Dichloroethene	NA	0.6 U
1,1-Dichloroethane	NA	0.3 U
trans-1,2-Dichloroethene	NA	0.3 U
cis-1,2-Dichloroethene	NA	1.0 U
Chloroform	NA	0.2 U
1,2-Dichloroethane	NA	0.2 U
1,1,1-Trichloroethane	NA	0.2 U
Carbon Tetrachloride	NA	0.2 U
Bromodichloromethane	NA	0.2 U
1,2-Dichloropropane	NA	0.5 U
cis-1,3-Dichloropropene *	NA	0.3 U
Trichloroethene	NA	0.4 U
Dibromochloromethane	NA	0.2 U
1,1,2-Trichloroethane	NA	0.4 U
Benzene	NA	0.2 U
trans-1,3-Dichloropropene *	NA	0.3 U
2-Chloroethyl Vinyl Ether	NA	0.5 U
Bromoform	NA	0.3 U
Tetrachloroethene	NA	0.1 U
1,1,2,2-Tetrachloroethane	NA	0.3 U
Toluene	NA	0.2 U
Chlorobenzene	NA	0.1 U
Ethylbenzene	NA	0.2 U
Xylene (Total)	NA	1.0 U

Sample ID	AK-12	AK-22
Lab Sample Number	31398	31492
Sampling Date	10/03/95	10/04/95
Dilution Factor		1.0
SEMIVOLATILE COMPOUNDS (ug/kg)		
N-Nitrosodimethylamine	NA	0.7 U
bis(2-Chloroethyl) ether	NA	1.2 U
1,3-Dichlorobenzene	NA	3.5 U
1,4-Dichlorobenzene	NA	3.6 U
1,2-Dichlorobenzene	NA	3.5 U
bis(2-chloroisopropyl) ether	NA	1.4 U
N-Nitroso-di-n-propylamine	NA	1.5 U
Hexachloroethane	NA	2.5 U
Nitrobenzene	NA	1.5 U
Isophorone	NA	1.7 U
bis(2-Chloroethoxy)methane	NA	1.7 U
1,2,4-Trichlorobenzene	NA	3.8 U
Naphthalene	NA	2.6 U
Hexachlorobutadiene	NA	2.2 U
Hexachlorocyclopentadiene	NA	1.7 U
2-Chloronaphthalene	NA	3.2 U
Dimethylphthalate	NA	1.3 U
Acenaphthylene	NA	2.1 U
2,6-Dinitrotoluene *	NA	1.5 U
Acenaphthene	NA	2.8 U
2,4-Dinitrotoluene *	NA	1.5 U
Diethylphthalate	NA	1.2 U
4-Chlorophenyl-phenylether	NA	2.9 U
Fluorene	NA	2.0 U
N-Nitrosodiphenylamine	NA	1.1 U
4-Bromophenyl-phenylether	NA	2.0 U
Hexachlorobenzene	NA	1.3 U
Phenanthrene	NA	1.1 U
Anthracene	NA	1.1 U
Di-n-butylphthalate	NA	1.0 U
Fluoranthene	NA	1.1 U
Pyrene	NA	0.6 U
Benzidino	NA	0.5 U
Butylbenzylphthalate	NA	0.7 U
3,3'-Dichlorobenzidino	NA	1.5 U
Benzo(a)anthracene	NA	0.9 U
Chrysene	NA	0.9 U

Sample ID	AK-12	AK-22
Lab Sample Number	31398	31492
Sampling Date	10/03/95	10/04/95
Dilution Factor		1.0
bis(2-Ethylhexyl)phthalate	NA	2.6
Di-n-octylphthalate	NA	1.0 U
Benzo(b)fluoranthene	NA	0.8 U
Benzo(k)fluoranthene	NA	0.9 U
Benzo(a)pyrene	NA	0.8 U
Indeno(1,2,3-cd)pyrene	NA	0.7 U
Dibenz(a,h)anthracene	NA	0.9 U
Benzo(g,h,i)perylene	NA	0.8 U
SEMIVOLATILE COMPOUNDS (GC) (ug/kg)		
DRO	519000	NA
PCBs (ug/kg)		
PCB 1016 *	2000 U	71 U
PCB 1221 *	2000 U	71 U
PCB 1232 *	2000 U	71 U
PCB 1242 *	2000 U	71 U
PCB 1248 *	2000 U	320
PCB 1254 *	2000 U	300 U
PCB 1260 *	2000 U	280
METALS (mg/kg)		
Antimony	NA	261
Arsenic	NA	5.1
Beryllium	NA	0.30 U
Cadmium	NA	1.1
Chromium	NA	33400
Copper	NA	1350
Lead	NA	5770
Mercury	NA	2.0
Nickel	NA	609
Selenium	NA	2.4 U
Silver	NA	0.80 U
Thallium	NA	4.4 U
Zinc	NA	4870

NOTES

mg/kg = milligrams per kilogram (parts per million - PPM)

ug/kg = micrograms per kilogram (parts per billion - PPB)

J = Indicates an estimated value below the Method Detection Limit

U = Undetected

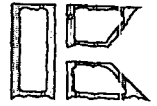
NA = Not Analyzed

* Values listed reflect the combined standards for "Total PCBs"

Elson T. Killam Associates, Inc.

27 Bleeker Street, P.O. Box 1008, Millburn, NJ 07041
☐ Tel 201/379 3400 ☐ Telex 642-057 ☐ Telecopier 201/376-1072

Environmental and Hydraulic Engineers



March 4, 1985

Passaic Valley Sewerage Commissioners
600 Wilson Avenue
Newark, N J 07105

Attention: Mario Graglia

Re: Discharge of Water from basement
flooding at Arkansas Company,
185 Foundry Street

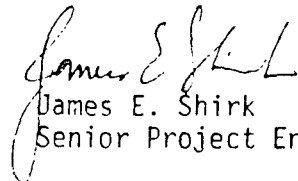
Dear Mr. Graglia:

We hereby request authorization to discharge approximately 400,000 gallons of water to the Passaic Valley Sewerage Commission Wastewater Treatment Plant. These waters originated from seepage and broken pipes at the Arkansas Company. The waste was collected in two phases. Groundwater evidently seeped through the walls until 100,000 gallons had collected. This liquid was analyzed for Priority Pollutants and other compounds by Elson T. Killam Associates, Inc., with the attached results. Only trace quantities of acid extractable and base/neutral extractable priority pollutants were found. In a second episode, an additional 300,000 gallons of city water were discharged to the cellar through broken pipes.

In order to perform further on site operations, it is necessary for us to pump out these flows. If the results of priority pollutant analysis indicate that this water can be discharged to the PVSC treatment plant, please sign and return the enclosed copy of this letter.

Very truly yours,

ELSON T. KILLAM ASSOCIATES, INC.


James E. Shirk
Senior Project Engineer

JES/ms

Accepted for Disposal
Passaic Valley Sewerage Commission

Date

88A000004

Elson T. Killam Associates, Inc.

27 Bleeker Street, P.O. Box 1008, Millburn, NJ 07041
Tel 201/379 3400 Telex 642 057 Telecopier 201/376-1072

Environmental and Hydraulic Engineers



ANALYTICAL DATA REPORT PACKAGE

Field Sample Number: 1124-9001
Laboratory Sample Number: 786-1124-9001
Sample Location: Lab Basement
Client Name: Arkansas
Client Address: Newark, NJ
Account Number: 112490
Date and Time of Sample Collection: 2/5/85 13:00

Lab Name: Elson T. Killam Associates, Inc.
N.J. Certification No.: 07059
Supervisor/Manager Signature: Douglas V. Sheeley
Name: Douglas V. Sheeley
Date: 3/4/85

ELSON T. KILLAM ASSOCIATES INC.

METALS DATA

Sample No: 1124-9001

Lab Sample ID No. 786-1124-9001

	Concentration (mg/L)	Detection Limit (mg/L)
ANTIMONY	0.02	0.02
ARSENIC	0.046	0.005
BERYLLIUM	BDL	0.005
CADMIUM	0.005	0.002
CHROMIUM	0.073	0.005
COPPER	0.12	0.02
LEAD	0.45	0.005
MERCURY	0.0002	0.0002
NICKEL	0.02	0.02
SELENIUM	BDL	0.005
SILVER	BDL	0.01
THALLIUM	0.02	0.01
ZINC	0.054	0.005

BDL = BELOW DETECTION LIMIT

Ashland Chemical Co.
Foundry Street

PASSAIC VALLEY SEWERAGE COMMISSIONERSY or (N)SEWER CONNECTION APPLICATIONPART I - SECTIONS A-CSECTION A: GENERAL INFORMATIONApplicant is:
Corporation X
Partnership _____
Other _____

1. Company Name: Ashland Chemical Company - Division of Ashland Oil, Inc.
2. Location: Avenue P & Foundry Street
Newark, New Jersey Zip Code: 07105
3. Mailing Address: 221 Foundry Street
Newark, New Jersey Zip Code: 07105
- Name, title, address and telephone number of person to contact concerning information provided in this application:
4. Name of Contact Official: Jon S. DeWitt
Title: District Manager Phone No.: 201/344-3333
5. Address: 221 Foundry Street, Newark, New Jersey 07105
6. Number of Employees - Full Time: 50 Part Time: ---
7. Number of Work Days Per Week: 5
Number of Shifts Per Day: One
Is production seasonal? No If so, explain: _____
8. New Users Only: Indicate date user desires to commence operations:

9. If property is owned, indicate Lot and Block Numbers: _____
Lots #1, 6, 10 & 15, Block 5003 19 81 Assessed Value: 521,200
10. If property is rented, indicate name and address of Landlord:
N/A

SECTION B: PRODUCT OR SERVICE INFORMATION

11. Brief description of manufacturing or other activity performed:
Storage and distribution of Industrial Chemicals & Solvents
12. Principal raw materials used: All common inorganic or organic chemicals and solvents (over 500 chemicals)
13. Principal products or services: Providing less than truckload quantities of various industrial chemicals and solvents.

688000001

REPORT TO THE NEAREST HUNDREDTH: 0.XX
(EXCEPT WHERE INDICATED)
(EXAMPLE: 0.36 mg/l) mg/L

CODE	PARAMETER	VALUE
1097	Antimony (Sb)	
* 1002	Arsenic (As)	<0.05
1022	Boron (B)	
1027	Cadmium (Cd)	
1034	Chromium Total (Cr)	
1042	Copper (Cu)	
1045	Iron (Fe)	
1051	Lead (Pb)	

REPORT TO THE NEAREST HUNDREDTH: 0.XX
(EXCEPT WHERE INDICATED)
(EXAMPLE: 0.36 mg/l) mg/L

CODE	PARAMETER	VALUE
* 1900	(Report to Mercury 0.XXX)	<0.002
1067	Nickel (Ni)	
1147	Selenium (Se)	
1077	Silver (Ag)	
1102	Tin (Sn)	
1092	Zinc (Zn)	
4053	(Report to Pesticides 0.XXX)	
2730	Phenol	
* CYNWIDE		<0.004

29. Samples collected by: HAVENS & EMERSON, INC. Date: NOV. 13, 1981
30. Samples analyzed by: HAVENS & EMERSON, INC. Date: NOV. 14 - DEC 31, 1981

Products being manufactured when sample was collected: _____

Ashland Newark is a distribution facility, no chemicals manufactured.

Certification:

The information contained in Part II of this application is familiar to me and, to the best of my knowledge and belief, such information is true, complete, and accurate.

If the applicant is a corporation, a corporate resolution is attached granting me the authority to sign the application on behalf of the corporation.

31. Name of Signing Official: Michael J. McCann

Title: District Manager

1/5/82

Date

Michael J. McCann
Signature



GROUNDWATER TECHNOLOGY

Groundwater Technology, Inc.

310 Horizon Center Drive, Trenton, NJ 08691

Tel: (609) 587-0300 Fax: (609) 587-7908

REPORT OF FINDINGS SOIL AND GROUNDWATER INVESTIGATION

**ASHLAND CHEMICAL, INC.
221 FOUNDRY STREET
NEWARK, ESSEX COUNTY, NEW JERSEY
ECRA CASE NO. 88695**

15 December 1992

Prepared For:

ASHLAND CHEMICAL, INC.
POST OFFICE BOX 2219
COLUMBUS, OHIO 43216

Prepared By:

GROUNDWATER TECHNOLOGY, INC.
310 HORIZON CENTER DRIVE
TRENTON, NEW JERSEY 08691

Lynn L. Carlson
Staff Geologist

Paul I. Lazaar
Project Manager

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FIGURES (Continued)

Figure 10 - Groundwater Elevation Contours - shallow wells 11 November 1992

Figure 11 - Groundwater Elevation Contours - deep monitoring wells 11 November 1992

APPENDICES

Appendix A - Drilling Logs

Appendix B - Results of NJDEPE File Review - Pitt-Consol Site

Appendix C - Well Certifications - Forms A and B

Appendix D - Monitoring Well Abandonment Forms

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Appendix F - Groundwater Sample Analytical Results Summary - 1989 and 1991 events

Appendix G - Well Gauging Data Forms

ATTACHMENTS

(Provided under separate cover)

Attachment I - Analytical Data Package - MW-4P

Attachment II - Analytical Data Package - Soil Samples

Attachment III - Analytical Data Package - Groundwater Samples

TABLE 4
MW-4P ANALYTICAL RESULTS SUMMARY
ASHLAND CHEMICAL, INC. SITE
221 FOUNDRY STREET
NEWARK, NEW JERSEY
ECRA CASE NO. 88695

PARAMETER	SAMPLE ID DEPTH (FEET) SAMPLE DATE	MW-4P 2.0 - 2.5 09/02/92	METHOD BLANK ---
Priority Pollutant Metals (mg/Kg)			
Antimony		ND	ND
Arsenic		7.4	ND
Beryllium		ND	ND
Cadmium		ND	ND
Chromium		6.6	ND
Copper		19.0	ND
Lead		34.0	ND
Mercury		0.29	ND
Nickel		6.0	ND
Selenium		ND	ND
Silver		ND	ND
Thallium		ND	ND
Zinc		250	ND
Base Neutral/Acid Extractable Compounds (mg/Kg)			
Targeted BNAs detected			
Bis(2-ethylhexyl)phthalate		ND	1.50 J
2-Methylnaphthalene		64.0	0.21 J
Naphthalene		56.0	0.83 J
Phenol		ND	1.60 J
TOTAL TARGETED BNAs		120	4.14
Non-targeted BNAs detected			
Benzene, 1-methyl-3-propyl		150	ND
Benzene, (1-methylpropyl)-		ND	2.5
Ethylmethyl benzene isomer		87.0	4.0
Ethylidimethyl benzene isomer		200	ND
Tetramethyl benzene isomer		100	ND
Trimethyl benzene isomer		527 (3)	ND
Cyclohexane isomer		158 (2)	ND
Methylnaphthalene isomer		65.0	ND
Unknown alkane		781 (9)	ND
Unknown		147 (2)	ND
TOTAL NONTARGETED BNAs		2215	6.5
Volatile Organic Compounds (mg/Kg)			
Targeted VOCs Detected			
2-Butanone		ND	1.10 J
Ethylbenzene		14.0	ND
Methylene chloride		0.88 J	ND
Xylenes (total)		56.0	ND
TOTAL TARGETED VOCs		70.9	1.7
Non-targeted VOCs Detected			
Dimethyl benzene isomer		42.0	ND
Ethylmethyl benzene isomer		53.0	ND
Trimethyl benzene isomer		186 (2)	ND
Tetramethyl benzene isomer		35.0	ND
Methyl methyl ethyl benzene isomer		196 (3)	ND
Methyl propyl benzene isomer		50.0	ND
Cyclohexane isomer		59.0	ND
Unknown		82.0 (3)	0.81
TOTAL NONTARGETED VOCs		703	0.81
TOTAL PETROLEUM HYDROCARBONS (mg/Kg)		33,000	ND
PESTICIDES/POLYCHLORINATED BIPHENYLS (mg/Kg)		ND	ND
TOTAL CYANIDE (mg/Kg)		4.2	ND
TOTAL PHENOLICS (mg/Kg)		ND	ND

NOTES

ND = Not Detected

J = Indicates the presence of a compound that meets the identification criteria, but the result is less than the sample PQL, but greater than zero.

xx = Concentration reported reflects total of similarly identified compounds



GROUNDWATER TECHNOLOGY

Groundwater Technology, Inc.

310 Horizon Center Drive, Trenton, NJ 08691 USA
Tel: (609) 587-0300 Fax: (609) 587-7908

**REMEDIAL ACTION WORKPLAN ADDENDUM
FORMER ASHLAND CHEMICAL COMPANY IC&S FACILITY
221 FOUNDRY STREET
NEWARK, NEW JERSEY
ISRA CASE NO. 88695**

15 December 1993

Prepared For:

Ashland Chemical, Inc.
P.O. Box 2219
Columbus, Ohio 43216

Groundwater Technology, Inc.

Prepared by:

Matthew Noblet
Project Manager

Groundwater Technology, Inc.

Prepared/Reviewed by:

Elliot Werk
Senior Geologist

Groundwater Technology, Inc.

Reviewed by:

Cymantha Liakos, PG
Program Manager

3.0 Additional Investigative Activities

3.1 Delineation of Asphalt-Like Material

In August 1992 and June 1993, a total of 26 test pits were completed to determine the extent of asphalt-like material in soils in the area of well MW-4. The results of the August 1992 test pit activities were reported to the NJDEPE as part of the 15 December 1992 *Report of Findings - Soil and Groundwater Investigation* prepared for ACC by GTI. A discussion of the combined results of the August 1992 and June 1993 test pit activities is presented below.

A total of 26 test pits were completed in proximity to well MW-4. **Figure 6** presents the locations of the test pits (labeled 4-1 through 4-26). **Table 2** presents a summary of the test pit results for this area.

- Asphalt-like material was observed in eight test pits (4-1, 4-2, 4-3, 4-4, 4-6, 4-8, 4-9, and 4-24). The asphalt-like material ranged in consistency from viscous to hard and was observed at locations immediately south of well MW-4, up to 15 feet east of well MW-4, up to 20 feet northeast of well MW-4, and up to 30 feet west of well MW-4. Asphalt-like material was also observed in two test pits (4-10 and 4-11) on top of subsurface concrete at locations 60 and 80 feet northwest of well MW-4.
- A black to brown-black LNAPL was observed in three test pits (4-20, 4-22, and 4-23) located immediately east and west and 15 east of a concrete slab north of well MW-4.
- A sheen was observed in three test pits (4-19, 4-21, and 4-26) at locations 20 feet north, 50 feet north, and 40 feet southeast of well MW-4.
- The ubiquitous presence of concrete prevented excavation of test pits in areas near and northeast of well MW-1.

A sample of the viscous asphalt-like material present in the upper fill material surrounding well MW-4 was collected on 2 September 1992 in an attempt to identify the material. **Table 3** summarizes the sample analytical results.

TPH analysis of the asphalt-like material detected 33,000 mg/Kg of this parameter. Since the TPH concentration was above 500 mg/Kg, the BNA extract was subjected to gel permeation chromatography cleanup (USEPA Method 3640) prior to analysis.

Targeted VOC detected in the sample consisted primarily of ethylbenzene (14.0 mg/Kg) and total xylenes (56.0 mg/Kg), which comprised 99% of the total concentration. Naphthalene (56.0 mg/Kg) and 2-methylnaphthalene (64.0 mg/Kg) were the only targeted BNAs detected in the sample. The majority of the nontargeted VOC and BNAs identified include various benzene isomers. The metals detected in sample MW-4P included arsenic (7.4 mg/Kg), chromium (6.6 mg/Kg), copper (19.0 mg/Kg), lead (84.0

mg/Kg), mercury (0.29 mg/Kg), nickel (6.0 mg/Kg), and zinc (250 mg/Kg). Cyanide was also detected at a total concentration of 4.2 mg/Kg. No detectable concentrations of pesticides, PCBs, and phenolics were found in this sample. Based on the physical characteristics and the analytical results from sample MW-4P, it appears that the fill material in the area around MW-4 contains a layer of degraded asphalt.

3.2 Delineation of LNAPL

In August 1992 and June 1993, a total of 25 test pits were completed to determine the extent of LNAPL on groundwater in the area of wells MW-9/9A. Based upon the results of the August 1992 test pit activities, three piezometers (PZ-1, PZ-2, and PZ-3) were installed on 4 September 1992 at locations around MW-9 to monitor the presence of LNAPL in the area. The results of the August 1992 test pit and September 1992 piezometer installation activities were reported to the NJDEPE as part of the 15 December 1992 *Report of Findings - Soil and Groundwater Investigation* prepared for ACC by GTI. A discussion of the combined results of the August 1992 and June 1993 test pit activities is presented below.

A total of 25 test pits were completed around well MW-9. **Figure 6** presents the locations of the test pits (labeled 9-1 through 9-25). **Table 4** presents a summary of the test pit results for this area. This investigation revealed the following;

- LNAPL was observed in eight test pits (9-1, 9-2, 9-5, 9-6, 9-7, 9-12, 9-24, and 9-25). The LNAPL was observed at locations up to 10 feet south of well MW-9, up to 10 feet southwest of well MW-9, up to 15 feet northwest of well MW-9, up to 30 feet north of well MW-9, and 30 feet northeast of well MW-9. LNAPL was also observed in one test pit (9-21) located immediately north of former AST #207, located 60 feet west of well MW-9.
- A clear film was observed in two test pits (9-11 and 9-16) located 30 feet west of well MW-9 and 50 feet north of well MW-9.
- A sheen was observed in 12 test pits (9-3, 9-4, 9-8, 9-9, 9-13, 9-14, 9-17, 9-18, 9-19, 9-20, 9-22, and 9-23) at locations 30 to 40 feet northeast of well MW-9, 25 to 30 feet northwest of well MW-9, immediately east and west of the LNAPL located at test pit 9-21, and 30 to 105 feet southwest of well MW-9.

Monitoring of liquid levels in piezometers PZ-1, PZ-2, and PZ-3 was conducted on 29 September 1992, 10 November 1992, 27 April 1993, and 15 November 1993. The results indicated no detectable presence of LNAPL in any of the three piezometers during these gauging events.

On 8 April 1993, when uncovering the original monitoring well MW-9 for abandonment, LNAPL were observed in the well. A sample of the LNAPL was collected and analyzed in an attempt to identify it. **Table 5** summarizes the analytical results for the LNAPL sample. Due to the viscosity of the material, the analytical laboratory determined the analytical sample size by weight rather than by volume. Therefore, the analytical results are presented in mg/Kg, not mg/L.

Asland Chemical Co.
Doremus Avenue

Return to:
PASSAIC VALLEY SEWERAGE COMMISSIONERS
790 Broad Street
Newark, N. J. 07102

RECEIVED 3 27 1972 Date: June 20, 1972

Plant Ref. No. 13FC0456

WASTE EFFLUENT SURVEY

(For Industries Served by the Passaic Valley Sewerage Commissioners)

Plant Name: Ashland Chemical Company

Address: 390 Doremus Avenue, Newark, New Jersey Zip: 07105

Person and Title to whom any further inquiries should be directed:

Phone No.: 201-589-3709

Number of Employees: 140

Number of Working Days Per Week: Five

Number of Shifts Per Day: Three

Area of Property: 7.8 Acres, or Sq. Ft.

Type of Industry and 4 digit U. S. Standard Industrial Classification No.: Synthetic Resin
Products 2820

Finished Product(s): Alkyd & Polyester Resins, and Bodied Oils

Average Production: 60 Million lb. per year

Raw Materials Used: Glycols, Organic Acids, Styrene, Vegetable & Marine Oils,
Exempt Solvents

Brief Description of Operations:

Resins are produced by reacting the raw materials in a batch reactor at elevated temperatures. Alkyd resins are diluted with exempt solvents before shipment.

Bodied oils are produced by heating raw oils in batch reactors.

Water received in *Gallons* (Note: multiply cu. ft. x 7.48)

Purchased water in 1971 from: City of Newark

1st Quarter 18,940,000 gal

2nd Quarter 25,050,000 gal

3rd Quarter 20,720,000 gal

4th Quarter 18,440,000 gal

Total Purchased 1971: 83,150,000 gal

Well Water

1st Quarter

2nd Quarter

3rd Quarter

4th Quarter

Total well water received in 1971: None

River Water

1st Quarter

2nd Quarter

3rd Quarter

4th Quarter

Total river water taken in in 1971: None

TOTAL OF ALL WATER RECEIVED IN 1971: 83,150,000 gal

Water Use in 1971:

Water to Product (include evaporated and lost water): 2,900,000 gal

Water to Sanitary Sewer: 80,250,000 gal

Water to Storm Sewer, River or Ditch: None

TOTAL WATER USE IN 1971: 83,150,000 gal

Name of River, Stream, or Tributary, and location of storm sewer or ditch outlet to river, stream, or tributary: None

**ANSWER THE FOLLOWING QUESTIONS ONLY IF THE
PLANT WASTE INCLUDES WASTE ATTRIBUTABLE TO INDUSTRIAL OPERATIONS**

(Note: Analyses should be based on a 24-hour composite sample)

Characteristics of Plant Waste discharged to sanitary or combined sewer, after treatment if any. Indicate units of measure where applicable (e.g. Mg/l).

- a) pH: 11.6 b) Turbidity: 232 JTU
- c) Temperature: 80°F d) Radioactive? Yes No X
- e) Solids Concentration:
- | | | | | | |
|---------------------|----------|----------|----------|---------|----------|
| 1) Total Solids | 2530 ppm | Volatile | 1452 ppm | Mineral | 1128 ppm |
| 2) Suspended Solids | 46 ppm | Volatile | 33 ppm | Mineral | 13 ppm |
- f) Oil and Grease Concentration:
- 1) Floatable Oils Trace
- 2) Emulsified Oils 34 ppm
- g) Chlorides 22 ppm
- h) Chemical Oxygen Demand (C.O.D.): 5141 ppm
- i) 5-day Bio-chemical Oxygen Demand (B.O.D.): 1732 ppm
- j) Total organic carbon (T.O.C.): 1508 ppm
- k) Metallic Ions—Name and concentration (Important—list each metal in waste, e.g., chromium hex. and triv. Antimony, Lead, Mercury, Copper, Vanadium, Nickel; give concentration and total daily discharge of each metal.)
- Cr (hex and trivalent) N.D. Cu. 68 ppm (1.8 lb/day) Pb .238 ppm (.64 lb/day)
- Hg .0009 ppm (.0024 lb/day) Va < .05 ppm Ni < 0.025 ppm Sb < 0.1 ppm
- l) Toxic Material—Name and concentration e.g., cyanide salts, etc.): None
- m) Solvents—Name and concentration: Total Extractable 34 ppm
- n) Resins—Name and concentration (Lacquers, Varnishes, Synthetics): Total Extractables 34 ppm
- o) Date and time span of sample April 10, 1972 & May 11, 1972 24 hr. composites

Explain hours, method of discharge of waste to Sanitary Sewer and peak rate of flow, e.g., (continuing for 8 hours per day, 5 days per week at 100 gal./day rate) (batch twice a day for 20 minutes at 100 gal./min.) (Continuous 24 hours steady or with peaks at 2 P.M., peak rate 3 M.G.D.) etc.

Continuous Discharge 24 hr/day 5 days per week average flow 321,000 gal/day.

Peak flow 650,000 gal/day (estimated)

Characteristics of Plant Discharge to Storm Sewer, River, or Ditch, after treatment if any. Indicate units of measure where applicable (e.g., Mg/l).

a) pH: b) Turbidity:

c) Temperature: d) Radioactive? Yes No

e) Solids Concentration:

1) Total Solids Volatile Mineral

2) Suspended Solids Volatile Mineral

f) Oil and Grease Concentration:

1) Floatable Oils

2) Emulsified Oils

g) Chlorides

h) Chemical Oxygen Demand (C.O.D.):

i) 5-day Bio-chemical Oxygen Demand (B.O.D.):

j) Total Organic Carbon (T.O.C.):

k) Metallic Ions—Name and concentration (Important—list each metal in waste, e.g., chromium hex. and triv. Antimony, Lead, Mercury, Copper, Vanadium, Nickel; give concentration and total daily discharge of each metal.):
.....
.....

l) Toxic Material—Name and concentration (e.g., cyanide salts, etc.):

m) Solvents—Name and concentration:

n) Resins—Name and concentration (Lacquers, Varnishes, Synthetics):

o) Date and time span of sample:

Do you pretreat any waste before discharge?

If so, describe process and disposal of residue removed:

Certification of Laboratory doing sampling and making analyses shall be given. Procedures shall be those shown in the 13th edition of Standard Methods for the Examination of Water and Wastewater, where applicable. If no procedure is applicable, the laboratory is to describe method and procedure used in analyses.

.....
Signature and title of person preparing report

Return to:
PASSAIC VALLEY SEWERAGE COMMISSIONERS
600 Wilson Avenue
Newark, N. J. 07105
(201) 344-1800

Date: May 27, 1975

Plant Ref. No. IBEQ456

WASTE EFFLUENT SURVEY

(For Industries Served by the Passaic Valley Sewerage Commissioners)

Plant Name: *Spencer Kellogg Div. of Textron*
~~Ashland Chemical Resins & Plastics, Division of Ashland Oil, Inc.~~

Address: 390 Doremus Avenue, Newark, New Jersey Zip 07105

Person and Title to whom any further inquiries should be directed:

D. Borr P.E.
Mr. A. E. Dieffenbach

Phone No.: (201) 589-3709

Number of Employees: 140

Number of Working Days Per Week: Five

Number of Shifts Per Day: Three

Area of Property: 7.8 Acres, or Sq. Ft.

Type of Industry and 4 digit U. S. Standard Industrial Classification No.: *Synthetic Resin Products*

Synthetic Resin Products 2820

Finished Product(s): Alkyd & Polyester Resins

Average Production: 60 million lb/yr.

Raw Materials Used: Polyalcohols, Glycols, Polybasic Acids, Styrene, Vegetable & Marine Oils, & Various Solvents

Brief Description of Operations: Resins are produced in a batch reactor at elevated temperatures. Some resins are dilluted with solvents before shipment. Some oils are (bodied) heated in batch reactors before use as a raw material.

**ANSWER THE FOLLOWING QUESTIONS ONLY IF THE
PLANT WASTE INCLUDES WASTE ATTRIBUTABLE TO INDUSTRIAL OPERATIONS**

(Note: Analyses should be based on a 24-hour composite sample)

Characteristics of Plant Waste discharged to sanitary or combined sewer, after treatment if any. Indicate units of measure where applicable (e.g. Mg/l).

- a) pH: 8.2 b) Turbidity: 331 JTU
- c) Temperature: 70°F. d) Radioactive? Yes No ☒
- e) Solids Concentration:
- 1) Total Solids 1,700 mg/L. Volatile 676 mg/L. Mineral 1,109 mg/L.
- 2) Suspended Solids 90 mg/L. Volatile * 55 mg/L. Mineral 35 mg/L.
- f) Oil and Grease Concentration:
- 1) Floatable Oils ** Trace
- 2) Emulsified Oils 55 mg/L.
- g) Chlorides 114 mg/L.
- h) Chemical Oxygen Demand (C.O.D.): 3,417 mg/L.
- i) 5-day Bio-chemical Oxygen Demand (B.O.D.): 1,383 mg/L.
- j) Total organic carbon (T.O.C.):
- k) Metallic Ions—Name and concentration (Important—list each metal in waste, e.g., chromium hex. and triv. Antimony, Lead, Mercury, Copper, Vanadium, Nickel; give concentration and total daily discharge of each metal.)
- See Attachment.
- l) Toxic Material—Name and concentration e.g., cyanide salts, etc.): None
- m) Solvents—Name and concentration: Total Extractable = 51 mg/L.
- n) Resins—Name and concentration (Lacquers, Varnishes, Synthetics):
- Total Extractable = 51 mg/L.
- o) Date and time span of sample 4/15/75 # 4/16/75 24 HR SAMPLE

Explain hours, method of discharge of waste to Sanitary Sewer and peak rate of flow, e.g., (continuing for 8 hours per day, 5 days per week at 100 gal./day rate) (batch twice a day for 20 minutes at 100 gal./min.) (Continuous 24 hours steady or with peaks at 2 P.M., peak rate 3 M.G.D.) etc.

Discharge 24 hr/day 5 days/wk.

Average Flow 434,200 gal/day

Peak Flow 650,000 gal/day

* Based on Total Extractables.

** Based on Observation

WASTE EFFLUENT SURVEY

SECTION K.

Lead as Pb. 0.08 mg/L. (0.289 lb/day)

Nickel as Ni. Less than 0.01 mg/L. (Less than 0.036 lb/day)

Mercury as Hg. Less than 0.0002 mg/L. (Less than 0.00072 lb/day)

Antimony as Sb. Less than 0.2 mg/L. (Less than 0.72 lb/day)

Vanadium as V. Less than 0.5 mg/L. (Less than 1.8 lb/day)

Copper as Cu. 1.4 mg/L. (Less than 5.06 lb/day)

Chromium as Cr. 0.295 mg/L. (Less than 1.07 lb/day)

PASSAIC VALLEY SEWERAGE COMMISSION
NEWARK, NEW JERSEY

HEAVY METALS SOURCE DETERMINATION STUDY

IN COMPLIANCE WITH OCEAN DUMPING PERMIT
NO. 11 NJ003 INTERIM SECTION 910

Passaic Valley Sewerage Commissioners

JOSEPH M. KEEGAN	- Chairman
BEN W. GORDON	- Vice Chairman
THOMAS J. CIFELLI	- Commissioner
VINCENT CORRADO	- Commissioner
ROBERT J. DAVENPORT	- Commissioner
RICHARD M. GIACOMARRO	- Commissioner
CHARLES A. LAGOS	- Commissioner
CARMINE T. PERRAPATO	- Executive Director
ROCCO D. RICCI	- Chief Engineer

PHASE II

APRIL 1980

DRAFT

Elson T. Killam Associates, Inc.

Environmental and Hydraulic Engineers



KLL013740

Atlas Refinery Inc.

PASSAIC VALLEY SEWERAGE COMMISSION - HEAVY METAL SOURCE DETERMINATION
 PHASE II INDUSTRIAL CONTRIBUTION
 SUB-AREA 0

CONTROL NO.	NAME AND ADDRESS OF INDUSTRY	FLOW MBG	TOTAL CADMIUM LBS/DAY (MG/L)	TOTAL CHROMIUM LBS/DAY (MG/L)	TOTAL COPPER LBS/DAY (MG/L)	TOTAL LEAD LBS/DAY (MG/L)	TOTAL NICKEL LBS/DAY (MG/L)	TOTAL ZINC LBS/DAY (MG/L)	TOTAL ARSENIC LBS/DAY (MG/L)	TOTAL MERCURY LBS/DAY (MG/L)
Y30	CHARLES BROSSELY CO. 217 SOUTH 10TH ST. EAST ORANGE	0.0040	0.000 (0.012)	0.280 (8.420)	0.012 (0.359)	0.001 (0.022)	0.001 (0.038)	0.006 (0.166)	0.000 (0.001)	0.0000 (0.001)
Y20	A & L PETERS INC. 56 MARBURY ST. NEWARK	0.0150	0.001 (0.005)	0.005 (0.038)	0.014 (0.108)	0.003 (0.020)	0.001 (0.007)	0.011 (0.067)	0.000 (0.001)	0.0000 (0.000)
Y25	AKUL CHEMICAL KUTHERFORD ST. NEWARK	0.0020	0.000 (0.008)	0.002 (0.070)	0.004 (0.220)	0.001 (0.030)	0.000 (0.010)	0.007 (0.410)	0.000 (0.001)	0.0001 (0.005)
Y30	ALLIANCE CHEMICAL INC. 33 AVE. F NEWARK	0.1170	0.027 (0.028)	0.309 (0.317)	0.418 (0.428)	0.701 (0.718)	0.278 (0.274)	653.772 (670.000)	0.001 (0.001)	0.0024 (0.002)
Y40	ALL PLATING & CASTING INC. 589 FERRY ST. NEWARK	0.0190	0.015 (0.093)	0.014 (0.091)	1.348 (8.510)	0.003 (0.022)	0.472 (2.980)	0.056 (0.351)	0.039 (0.245)	0.0001 (0.001)
Y50	ANODIZING CORP. 39 AVE. L NEWARK	0.0090	0.000 (0.005)	0.124 (1.650)	0.010 (0.135)	0.021 (0.282)	0.001 (0.011)	0.005 (0.066)	0.000 (0.001)	0.0003 (0.003)
Y52	ARKANSAS CO., INC. 185 FOUNDRY ST. NEWARK	0.0280	0.002 (0.007)	0.008 (0.033)	0.008 (0.036)	0.021 (0.089)	0.007 (0.032)	0.074 (0.315)	0.000 (0.001)	0.0029 (0.012)
Y55	AKUL CHEMICAL PRODUCTS CO. 649 FERRY ST. NEWARK	0.0001	0.000 (0.005)	0.000 (0.005)	0.000 (0.008)	0.000 (0.005)	0.000 (0.005)	0.000 (0.014)	0.000 (0.001)	0.0000 (0.000)
Y60	ARI METAL U. S. A. INC. 300 PASSAIC ST. NEWARK	0.1480	0.010 (0.008)	6.480 (5.250)	0.128 (0.104)	0.415 (0.336)	0.032 (0.026)	2.382 (1.930)	0.001 (0.001)	0.0006 (0.000)
Y70	ASHLAND OIL INC. 400 DUREMUS AVE. NEWARK	0.3140	0.047 (0.018)	0.202 (0.077)	0.141 (0.074)	0.778 (0.106)	0.014 (0.005)	0.526 (0.201)	0.003 (0.001)	0.0029 (0.001)

**REQUEST FOR INFORMATION FOR DIAMOND ALKALI SUPERFUND SITE,
PASSAIC RIVER STUDY AREA**

- 1) Since 1897.
- 2) a) Although Atlas Refinery, Inc. is not a hazardous waste generator, an EPA identification number was obtained for the removal of some obsolete materials and a storage tank clean-up.
EPA ID No. NJD 002153344.

 b) No.
- 3) No. As to all listed materials with the exception of a small quantity of laboratory reagents consisting of some metal salts and solvents.
- 4) a) All of our finished products and by-products are non-hazardous and non-DOT regulated materials.

 b) Not applicable.
- 5) a) There is no hazardous waste processing, treatment, storage or on-site disposal activity at our facility. However, David L. Schroeder arranged the removal of the below-listed hazardous wastes by contracting the waste haulers as shown in answer to question 5(b).

 b) The following waste haulers were used for the removal and disposal of some hazardous waste due to a raw material storage tank clean-up and the removal of some obsolete chemicals:

 * S&W Waste, Inc.; Basic chromium sulfate; 02/09/96.
 105 Jacobus Ave. South Kearny, NJ 07032

 * Environmental Services of America, Inc.; Sulfuric acid storage tank clean-up;
 01/13/94.
 937 Hazelwood Ave. Bldg. 2, Rahway, NJ 07065
 Disposal site: Northeast Environmental Services, Inc.
 Canal Road, Wampsville, NY 13163

* Laidlaw Environmental, Inc.; Removal of some obsolete chemicals from the laboratory(Lab-pack); 02/18/93
3527 Whiskey Bottom Road, Laurel, MD 20724

* SCA Chemical Services Company; Obsolete formaldehyde solution and solid phenol; 09/09/81.
100 Lister Avenue, Newark, NJ 07105

- c) No hazardous waste storage activity is conducted in our facility. Some hazardous substances are used in our processes as raw materials. These chemicals are reacted with the raw materials and are chemically altered completely. They neither exist in our products nor accumulate as a waste.
- i) Hazardous material-containing drums of raw materials are stored inside the buildings. These drums are placed on concrete floors in self-contained skids for spill control purposes.
 - ii) Only empty drums have been kept outside of the buildings.

d) No hazardous waste treatment is conducted in our facility.

- 6) a) The process waste water generated at Atlas Refinery, Inc. does not contain any hazardous materials. It only requires treatment for pH adjustment and oil recovery.
- i) Plant waste water has been discharged to the PVSC sanitary sewer since the inception of the PVSC facility.
 - ii) Plant waste water has been and continues to be treated for pH adjustment and oil recovery prior to discharge, since it contains a variety of fish and lard oils.
 - iii) Prior to PVSC, there are no records available.
 - iv) Representative samples of PVSC monitoring reports are attached.
- b) i) Plant drains have been and continue to be connected to the sanitary sewer since the inception of the PVSC sanitary sewer.
- ii) Prior to PVSC, there are no records available.
- c) i) Yes. Storm sewers have existed at the facility for many years.(Exact date unknown). There is a small catch basin at the north side of the facility to collect rainwater. This catch basin was built in 1972.
- ii) The catch basin is concrete.
- iii) Not applicable.

- iv) The catch basin contains only rain water. There is no connection to the plant waste water line. All stormwater discharges have been released to the storm sewer. There has been no need to treat these discharges consisting solely of rain water.
- d) No connection exists to the storm basin on Blanchard Street. However, some oils were carried to the Blanchard Street over the railroad tracks by rain water in June, 1972.
- e) We are unaware of any illegal connection to the storm sewer on Lockwood Street. Our files do not contain any information regarding an August, 1977 PVSC report for the Lockwood Street incident.
- f) The plant effluent flow diagram is attached.
- 7) a) Atlas Refinery does not generate hazardous waste as the result of normal operations. The following is a list of the hazardous materials generated due to a storage tank clean-up and the removal of some obsolete chemicals from the plant and the laboratory:

<u>MATERIALS</u>	<u>VOLUMES</u>	<u>DATES</u>
- Sulphuric Acid Sludge	560 gals.	01/13/94
- Phenol Compounds	3600 lbs.	09/09/81
- Formaldehyde solution	1000 gals.	09/09/81
- Several chemicals from the lab(Lab-pack)	As attached	02/18/93
- Basic Chromium Sulphate	140 lbs.	02/09/96

Copies of the waste manifests are attached.

- b) No. To our knowledge, there has been no disposal or discharge of any hazardous material to the Passaic River from Atlas Refinery, Inc. at any time.
- 8) a) No. To our knowledge, there has not been any incident resulting in a release or a discharge of any hazardous material on the property, into the waste water or storm drainage system at the facility or to the Passaic River at any time.
- b) Not applicable.

- 9) a) Yes.
i) No.
ii) Yes.
- b) December, 1992. Duration was less than one day.
- 10) Atlas Refinery, Inc. was cited by the Passaic Valley Sewerage Commissioners in March, 1989. The reason for this citation was the excess Total Petroleum Hydrocarbon (TPH) presence in the discharged plant effluent. Copies of correspondence pertaining this matter are attached.
- 11) Attached are the copies of the Community Right-to-Know Surveys covering this facility for the years 1993, 1994 and 1995. These reports are indicative of the chemicals used at Atlas Refinery for the periods in question. Volumes of individual chemicals have varied over the years. Copies of the hazardous waste manifests are also attached.
- 12) a) Two soil borings were undertaken for STRUCTURAL ENGINEERING purposes in 1994. An additional soil boring was undertaken in 1995 for confirmation purposes. Soil compaction tests were performed by the Civil Engineering Department of Rutgers University.
- b) Test results are attached.
- c) No testing or studies have been performed at the Atlas Refinery Inc. facility for ECRA/ISRA purposes.
- 13) a) Yes. The property consists of several lots and was purchased as follows:
- Purchased from American Hair Felt Company; January 16, 1918.
- Purchased from Frederic Schroeder and Emily Schroeder; July 1, 1918. (The Corporation occupied this parcel as a tenant from 1897 to July 1, 1918).
- Purchased from Continental Oil Company; August 30, 1943.
- Purchased from The Central Railroad Company of New Jersey; June 30, 1969.
- Purchased from Messinger Trucking; June 9, 1972.
- b) Not applicable.
- c) Atlas Refinery, Inc. is the only company which has owned and operated the facility from 1940 to the present.

- 14) a) Atlas Refinery, Inc.
b) Steven B. Schroeder, President.
David L. Schroeder, Executive Vice President.
c) New Jersey.
d) Copies of the Certificate of Incorporation are attached together with the amendments thereto.
e) Not applicable.
f) Partnership of Schroeder Family members prior to 1897.
g) Not applicable.
h) Not applicable.
i) Not applicable.

- 15) Steven B. Schroeder, President.
142 Lockwood Street, Newark, NJ 07105
Phone: 201-589-2002

David L. Schroeder, Executive Vice President
142 Lockwood Street, Newark, NJ 07105
Phone: 201-589-2002

Robert J. Weber, Vice President
142 Lockwood Street, Newark, NJ 07105
Phone: 201-589-2002

Ercument Aktuz, Environmental Consultant
Enpro International
2439 3rd Street #3, Fort Lee, NJ 07024
Phone: 201-585-2032

Thomas V. Jardine, Counsellor At Law
Jardine & Pagano
11 Cleveland Place, Springfield, NJ 07081
Phone: 201-467-1620

ATLAS REFINERY, INC.

PLANT EFFLUENT ANALYSIS FOR PVSC
QUESTION NO. 6a) iv

ABB000047



Bacteriological and Chemical Testing

Telephone (908) 688-8900
Fax (908) 688-8906

REPORT OF ANALYSIS

REPORT # 941019002.0

CLIENT # ATL03

DATE SUBMITTED: 10/19/94

NEWARK

NJ 07105

ATT: MR. DUNECZKY

SAMPLE TYPE: WASTEWATER

SAMPLE ID:

SAMPLE LOCATION: @BUILDING #5

DATE SAMPLED: 10/19/94

TIME SAMPLED: 8:00AM

[illegible]

\leq -- less than, not detected.

ABB000051



410 Hillside Avenue
Hillside, NJ 07205



ATLAS REFINERY, INC.

HAZARDOUS WASTE MANIFESTS
QUESTIONS NO. 7 & 11

ABB000067



Department of the Environment - Hazardous & Solid Waste Management Administration
2500 Broening Highway Baltimore, MD 21224

Hazardous
Waste
Program

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039 Expires 9/30/92

cc: - LRATK

Information in the shaded
areas is not required by
Federal law.

UNIFORM HAZARDOUS
WASTE MANIFEST

1. Generator's US EPA ID NO.

N J D 6 0 2 1 5 3 3 4 4

Manifest
Document No.

0 7 7 5 9

Page 1
2. of

0 3

3. Generator's Name and Mailing Address

Dave Schroeder
(201) 589-2002

Atlas Refinery
142 Lockwood Street
Newark, NJ 07105

4. Generator's Phone ()

5. Transporter 1 (Company Name)

6. US EPA ID Number

N E D 9 8 0 5 5 4 6 5 3

Laidlaw Environmental Services (TS), Inc.

7. Transporter 2 (Company Name)

8. US EPA ID Number

9. Designated Facility Name and Site Address

Laidlaw Environmental Services (TS), Inc.
3527 Whiskey Bottom Road
Laurel, MD 20724

10. US EPA ID Number

N E D 9 8 0 5 5 4 6 5 3

A. State Manifest
Document Number

MDC 0391224

B. State Generator's ID Number

C. State Transporter's ID
Vehicle Sticker Number

HWH 0 1 5

D. Transporter's Phone

301/953-9583

E. State Transporter's ID

HWH

Vehicle Sticker Number

A

F. Transporter's Phone

G. State Facility ID

A207
H. Facility's Phone

3 0 1 - 9 5 3 - 9 5 8 3

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)

12. Containers
No. Type

13. Total Quantity

14. Unit
W/Vol

I. Waste No.

a. ORM-A, n.o.s., NA 1693, (1lb pack)

0 0 2 D F

0 0 0 1 0 0

P

N O N E

b. Waste Mercury, Metallic, ORM-B, NA 2809, RO(D009)

0 0 1 D M

0 0 0 0 2 0

P

D O O 9

c. Waste Mercurous Nitrate, Oxidizer, UN 1627

0 0 1 D F

0 0 0 0 2 0

P

D O O 1

d. Waste Sodium Peroxide, Oxidizer, UN 1504

0 0 1 D M

0 0 0 0 2 0

P

D O O 1

J. Additional Description for Materials Listed Above

HAZ CODE Physical State Specific Gravity Percentage
a. - - - S 0 0 0 . 8 1 0 0 %

HAZ CODE Physical State Specific Gravity Percentage
c. I E S 0 0 5 . 3 1 0 0 %

b. E S 0 0 9 . 0 1 0 0 %

d. I S 0 0 2 . 5 1 0 0 %

K. Handling Codes for
Waste Listed Above

a. S c. S

b. S d. S

15. Special Handling Instructions and Additional Information

NJ DEP S5866

"EMERGENCY CONTACT" **1-800-535-5053 (596)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and Maryland Statutes or Regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name

Signature

Date

WALTER STACY

0 2 1 2 9 3

17. Transporter 1 (Acknowledgement of Receipt of Materials)

Printed/Typed Name

Signature

Date

Walter R. Klepaolo

0 2 1 2 9 3

18. Transporter 2 (Acknowledgement of Receipt of Materials)

Printed/Typed Name

Signature

Date

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

Signature

Date

Timothy P. J. [Signature]

0 5 1 3 7 3

PASSAIC VALLEY SEWERAGE COMMISSION
NEWARK, NEW JERSEY

HEAVY METALS SOURCE DETERMINATION STUDY

IN COMPLIANCE WITH OCEAN DUMPING PERMIT
NO. NJ003 INTERIM SECTION 8(c)

Passaic Valley Sewerage Commissioners

JOSEPH M. KEEGAN	- Chairman
BEN W. GORDON	- Vice Chairman
THOMAS J. CIFELLI	- Commissioner
VINCENT CORRADO	- Commissioner
ROBERT J. DAVENPORT	- Commissioner
RICHARD M. GIACOMARRO	- Commissioner
CHARLES A. LAGOS	- Commissioner
CARMINE T. PERRAPATO	- Executive Director
ROCCO D. RICCI	- Chief Engineer

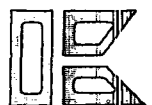
PHASE II

APRIL 1980

000000

Elson T. Killam Associates, Inc.

Environmental and Hydraulic Engineers



KI 1013740

PASSAIC VALLEY SEWERAGE COMMISSION - HEAVY METAL SOURCE DETERMINATION
PHASE II INDUSTRIAL CONTRIBUTION
SUB-AREA D

PAGE 2

CONTROL NO.	NAME AND ADDRESS OF INDUSTRY	FLOW GPD	TOTAL CADMIUM LBS/DAY (MG/L)	TOTAL CHROMIUM LBS/DAY (MG/L)	TOTAL COPPER LBS/DAY (MG/L)	TOTAL LEAD LBS/DAY (MG/L)	TOTAL NICKEL LBS/DAY (MG/L)	TOTAL ZINC LBS/DAY (MG/L)	TOTAL ARSENIC LBS/DAY (MG/L)	TOTAL MERCURY LBS/DAY (MG/L)
980	ATLAS REFINERY INC. 142 LOCKWOOD ST. NEWARK	0.0220	0.014 (0.077)	0.338 (1.840)	0.066 (0.358)	0.782 (4.260)	0.136 (0.742)	0.027 (0.149)	0.001 (0.007)	0.0005 (0.001)
995	AUTOMATIC PLATING INC. 185 FOUNTAIN ST. NEWARK	0.0420	0.022 (0.064)	6.690 (19.100)	0.184 (0.525)	0.033 (0.095)	0.178 (0.508)	12.190 (34.800)	0.000 (0.001)	0.0009 (0.001)
1000	AUTOMATIC PLATING METHODS INC. 347 FERRY ST. NEWARK	0.0820	3.529 (5.160)	4.384 (6.410)	3.358 (4.910)	0.193 (0.282)	1.306 (1.910)	29.680 (43.400)	0.002 (0.003)	0.0003 (0.000)
1010	BARBER PHOTOGRAPHIC CO. 378 SIXTH AVE. NEWARK	0.0040	0.000 (0.005)	0.001 (0.020)	0.022 (0.649)	0.005 (0.150)	0.003 (0.094)	0.024 (0.720)	0.000 (0.003)	0.0316 (0.948)
1020	RAYMONNE BAKKEL & DRUM CO. 154 RAYMOND BLVD. NEWARK	0.0440	0.448 (1.220)	1.167 (3.180)	0.650 (1.770)	6.715 (18.300)	0.067 (0.183)	3.281 (8.940)	0.021 (0.056)	0.1101 (0.300)
1030	BENJAMIN MOORE & CO. 134 LISTER AVE. NEWARK	0.0320	0.016 (0.060)	0.755 (2.830)	1.022 (3.830)	0.899 (3.370)	0.270 (1.010)	2.989 (11.200)	0.009 (0.033)	0.0000 (0.000)
1032	BENNET HEAT TREATING CO. INC. 690 FERRY ST. NEWARK	0.0160	0.001 (0.005)	0.001 (0.005)	0.013 (0.098)	0.001 (0.005)	0.001 (0.005)	0.002 (0.013)	0.000 (0.001)	0.0000 (0.000)
1035	BESSEMER PROCESSING CO. INC. 135 HAYNES AVE. NEWARK	0.0450	0.021 (0.057)	0.123 (0.327)	0.087 (0.232)	0.310 (0.826)	0.030 (0.080)	0.150 (0.401)	0.016 (0.042)	0.0020 (0.005)
1045	BLACK OXIDE PROCESSING CORP. 85 GOTHARD ST. NEWARK	0.0110	0.000 (0.005)	1.477 (16.105)	0.015 (0.168)	0.000 (0.005)	0.000 (0.005)	0.174 (1.895)	0.000 (0.001)	0.0000 (0.000)
1050	BLUE LINE INC. 209 PARKHURST ST. NEWARK	0.0160	0.001 (0.008)	1.575 (11.800)	4.777 (35.800)	0.031 (0.233)	3.496 (26.200)	0.063 (0.470)	0.001 (0.011)	0.0004 (0.003)

KLL013811

Avenue P Landini



Preliminary Assessment

Avenue P Site
309-465 Avenue P
Newark, Essex County
NJD 980504831



POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

1. IDENTIFICATION

01 STATE 02 SITE NUMBER

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Circle all that apply)

☒ A SOLID ☐ E SLURRY
☐ B POWDERY FINES ☐ F LIQUID
☐ C SOLID ☐ G GAS

☐ D OTHER

02 WASTE QUANTITY AT SITE

(Check one)

TONS

CUBIC YARDS

NO OF DRUMS

2000

03 WASTE CHARACTERISTICS (Circle all that apply)

☐ A TOXIC

☐ B CORROSIVE

☐ C RADIOACTIVE

☐ D PERSISTENT

☐ E SOLUBLE

☐ F INFECTIOUS

☐ G FLAMMABLE

☐ H EXPLOSIVE

☐ I HIGHLY VOLATILE

☐ J EXPLOSIVE

☐ K REACTIVE

☐ L INCOMPATIBLE

☐ M NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 CROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SOL	SOLIDS			
OLW	OTHER WASTE	Unknown		OLW Identified at site
SOL	SOLVENTS	Unknown		SOL Identified at site
PEO	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS	Unknown		OCC Identified at site
IOC	INORGANIC CHEMICALS	Unknown		IOC Identified at site
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	Unknown		MES Identified at site

IV. HAZARDOUS SUBSTANCES (See Appendix A for CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/ DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
MES	Arsenic	7440-38-2	Soil samples	86703	mg/kg
MES	Cadmium	7440-43-9	Soil samples	43.3	mg/kg
MES	Chromium	7440-47-3	Soil samples	3763.6	mg/kg
MES	Lead	7439-92-1	Soil samples	63007	mg/kg
MES	Mercury	7439-97-6	Soil samples	137.5	mg/kg
MES	Zinc	7440-66-6	Soil samples	4674	mg/kg
OCC	Toluene	108-88-3	Soil samples	2.76	mg/kg
OCC	Total Xylenes	1330-20-7	Soil samples	2.63	mg/kg
OLW	Naphta	803-306	Soil samples	21.00	mg/kg
SOL	Chlorobenzene	108-90-7	Plum Creek Water	.412	mg/kg
SOL	Trans Dichloroethene	156-60-5	Plum Creek Water	.155	mg/kg
SOL	Trichloroethylene	79-01-6	Plum Creek Water	.022	mg/kg
OCC	Benzene	71-43-1	Plum Creek Water	.015	mg/kg
OLW	Petroleum Hydrocarbons		Soil composite	10300	mg/kg
IOC	Sulfide		Soil composite	1080	mg/kg
OCC	Cyanide		Soil composite	3620	mg/kg

V. FEEDSTOCKS (See Appendix A for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (See Appendix B for Guidance)

Reference V

CAVANAUGH GROUP

293 WILSON AVENUE
NEWARK, NEW JERSEY 07105
(201) 344-4611

COPY

February 13, 1986

Emergency Hazardous/Toxic Waste
Cleanup Project
Avenue "P" - Newark, New Jersey
Block 5024, Parcels 21, 22 & 23

Newark Redevelopment & Housing Authority
57 Sussex Avenue
Newark, New Jersey 07103
Attn: Mr. Harold Lucas

Re: Subsurface Contamination Removal

Dear Mr. Lucas,

Test holes were made throughout the site in agreement with the New Jersey Department of Environmental Protection on site coordinator. The holes were made using our track excavator. In each case the depth of the hole was to ground water. The samples collected, both soil and water, were analyzed for the following parameters of the priority pollutants scan. They include:

- 1) 13 Metals
 - a. Antimony
 - b. Arsenic
 - c. Beryllium
 - d. Cadmium
 - e. Copper
 - f. Chromium
 - g. Lead
 - h. Mercury
 - i. Nickel
 - j. Selenium
 - k. Silver
 - l. Thallium
 - m. Zinc
- 2) Pesticides
- 3) PCB Scan
- 4) Volatile Organic Scan
 - 30 Standard Peaks
- 5) Other Identified Peaks
- 6) Acid Extractables
- 7) Base/Neutral Extractable Organics

The result of this data confirms that this area was used as a "dumping ground" for industrial waste. (This will be confirmed in subsequent reports and maps).

We have observed and made notation of a wide variety of colors (apparently pigments) in each hole. These observations were made, recorded and are a part of this report.

The analytical data collected clearly indicates that the soil is contaminated and that the area toward the rear of the property requires some remedial action.

The standards set forth by EPA are as follows:

	ppm
Arsenic	5.0
Barium	100.0
Cadmium	1.0
Chromium	5.0
Lead	5.0
Mercury	.2
Selenium	1.0
Silver	5.0

We have summarized the data in section two for your convenience. It is quite apparent that chrome, lead, mercury as well as some hot spots of naphth, and other volatiles revealed in the volatile organic scan (VOC) are present in unacceptable quantities.

The data also indicates very strongly that there remains a subsurface problem. It would be prudent at this point in time and concurrently with the stream investigation to locate and remedy the source of the going pollutants.

We have several options available to resolve the problem;

1. Total excavation and replacement of the contaminated area. This would entail ripping off the surcharge, removing the next layer to an uncontaminated depth, replacing the excavated soil with good clean certified fill and finally replacing the surcharge.
2. Slurry wall, we can install a clay bentonite wall parallel to the two sides of the stream. The lower portion of the wall would have a cracked stone and evacuation pipe system installed. The next part of this methodology would entail forcing clean liquid through the soil in order to capture the pollutants.
3. Another alternative would be the installation of shallow wells and evacuate them periodically. We would have to install automatic pumps and a holding vessel. This would be time consuming and may or may not remove all the contaminants.
4. Trenching. Probably the least expensive most efficient method to remove the source of contamination is to trench the site. We would propose trenching on 10' centers. In each trench we would support the environmental activity with analysis for priority pollutants. The depth of each trench would be to ground water.

AVENUE P LANDFILL
INVESTIGATIVE SUMMARY

Historically, the eight acre Avenue P Landfill and adjacent properties have served as an illegal dump. In the early eighties, hundreds of drums were observed on the western portion of the site. Subsequently, an Administrative Consent Order (ACO) was signed with the site's property owner, the Newark Redevelopment and Housing Authority in 1985. A cleanup proceeded thereafter, but was limited to surface drums and contamination. All remedial activities were discontinued in 1987, at the request of the Housing Authority. Groundwater contamination still warrants abatement.

The site is located in the Iron Bound Section of Newark, which contains numerous chemical refineries and industrial facilities. Avenue P and the New Jersey Turnpike bound the site to the east and west respectively. Alliance Chemical Inc. is situated along the site's northern perimeter. Originally the site consisted of Lots 14, 16, 20, 21, 23, 24, and 28 (Block 502G), but is now designated as Lots 14 & 138, (357-405 Avenue P) according to the current tax map. The Newark Redevelopment and Housing Authority refers to the site as disposition parcel 103-9x. Parcel 103-9y borders the site's southern perimeter.

Property lines and ownership have changed frequently over the years. The Amalgamated Dyestuff and Chemical Works Inc., and American Fat and Tallow Co. were two of the first industries in the area. Avenue P was once a dirt road and referred to as Plum Point Lane in the thirties and forties.

The Amalgamated Dyestuff and Chemical Works Inc. occupied the area north of the landfill which is now owned by Alliance Chemical Inc. (309 -327 Avenue P). The property was conveyed to the Calco Chemical Co. in 1938. American Cyanamid purchased the facility six months later which they sold to Martin Laboratories in 1943. Subsequently, lease's were executed with Tiffany Chemical Company in July, 1946 (building 9, 9A, 11 & 13F), and Security Paint and Varnish in April, 1948 (building 8 & 13A). Both companies manufactured paints, varnishes, lacquers, dyes and oils.

During the fifties, the property was owned by Harry and Sophie Martin (husband and wife) and later by Plum Point Realty, who conveyed Lots 8 (1958) and 12 (1957), Block 5020, to Alliance Color and Chemical Company.

Sun Chemical Corp. purchased Lots 6, 9 and 10 (Block 5020) from Union Carbide on September 30, 1964. This property was purchased by D&J Trucking in 1974 and also included Lots 120, 122, 126 (Block 5060), which lie east of Avenue P. D&J conveyed all four tracts of land to the Housing Authority on March 17, 1978.

D&J Trucking purchased Lot 16 (Block 5020) which contained 2.904 acres from Emil and Mary Attanasio (husband and wife) in May of 1958. This property was sold by D&J on August 2, 1960 to A. Giordano & Sons, Inc. Additional land Lot 14 (Block 5020) was obtained from Harry B. and Elizabeth Yeskel on July 29, 1960. The Yeskel's had acquired this property in April, 1960 from the Attanasio's. Previous owners of Lot 16 included the City of Newark and Organic Salt and Acid Company.

DISCHARGE/ABANDONMENT INFORMATION:

Avenue P Landfill
357-405 Avenue P
City of Newark, Essex County
Block 5020; Lots 14 and 138

Current Owner:
Newark Redevelopment and Housing Authority
57 Sussex Street
Newark, NJ 07103

SUBSTANCES DISCHARGED/ABANDONED:

The following substances have been detected in soil, sediment, surface water and ground water samples obtained from the Avenue P Landfill by the Cavanaugh Group:

Base Neutrals: Anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, fluoranthene, flourene, naphthalene, phenanthrene, pyrene.

Metals: Antimony, arsenic, beryllium, cadmium, chromium, cyanide, lead, mercury, nickel, selenium, silver, sulfide, zinc.

PCBs: Aroclor 1260

Pesticides: b-BHC, heptachlor

Petroleum Hydrocarbons

Volatile Organics: Acetone, chlorobenzene, 1,1 dichloroethane, 1,1 dichlorooctylene, ethylbenzene, methyl isobutyl keytone, naptha, toluene, 1,1,2,2 tetrachloroethane, tetrachloroethylene, trichloroethylene, 1,1,1 trichloroethane, 1,1,2 trichloroethane trimethylsilane, xylene.

The Newark Redevelopment and Housing Authority retained the Cavanaugh Group, 19 Route 46, Fairfield, New Jersey to remediate contamination on site. Cavanaugh began mobilization of the site on April 29, 1985.

An emergency drum removal was conducted by Cavanaugh. The drums were staged in containment berms made from fill material taken on site. In June of 1985, twenty seven bore holes were sunk near the staging area. Soil samples were obtained from each boring and noted to contain multicolored (ie. white, red, blue, green, pink, yellow, orange, etc.) materials. Fifteen ground water samples were also collected from the borings. Metals and volatile organics were detected in the ground water and soil samples.

By July, 1985 the Cavanaugh Group had removed approximately 1,460 drums from the creek's banks and bottom. Most of the 55 gallon drums were ruptured. The contents of some drums analyzed contained low flash points (85 Degrees Fahrenheit), cyanides, corrosives and PCBs.



State of New Jersey
Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 028
Trenton, NJ 08625-0028

Scott A. Weiner
Commissioner

MAR 16 1993
John J. Delaney
Director

Prepared By David W. Paddock

Date March 12, 1993

IN THE MATTER OF THE
AVENUE P LANDFILL SITE

AND

NEWARK REDEVELOPMENT AND HOUSING AUTHORITY,
DOMINICK ATTANASI,
JOSEPH ATTANASI,
BENJAMIN MOORE & COMPANY, INC.,
SHERWIN-WILLIAMS COMPANY, INC.,
REVERE SMELTING AND REFINING CORP. OF NEW
JERSEY, INC.,
Respondents

ADMINISTRATIVE
CONSENT
ORDER

This Administrative Consent Order is issued pursuant to the authority vested in the Commissioner of the New Jersey Department of Environmental Protection and Energy (hereinafter "the Department") by N.J.S.A. 13:10-1 et seq., and the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq., and the Spill Compensation and Control Act, N.J.S.A. 58:10-23.11 et seq. and duly delegated to the Assistant Director, Division of Responsible Party Site Remediation pursuant to N.J.S.A. 13:18-4.

FINDINGS

1. The Avenue P Landfill Site (hereinafter the "Site") is located at 367-405 Avenue P, Newark, Essex County, New Jersey. The Site consists of approximately 8 acres, is currently defined as Block 5020, Lots 14 and 138 on the tax maps of the City of Newark. The Site is owned by the Newark Redevelopment and Housing Authority and is bordered generally by the New Jersey Turnpike to the west, Alliance Chemical to the north, Avenue P to the east and Newark Redevelopment and Housing Authority property to the south. There are no buildings or industrial facilities remaining at the Site. Plum Point Creek and an unnamed drainage ditch form the western and southern boundary of the Site, respectively.

waste pigments, alkyd resins, off-spec paint and waste varnish with D & J Trucking every month.

18. On January 11, 1988 the Department completed a Preliminary Assessment to assess the Site condition and the general extent of contamination at the Site. The sampling results detailed in this Preliminary Assessment indicate the following contamination:

<u>Soil</u>	
<u>Contamination</u>	<u>Concentration (ppm)</u>
Arsenic	86,703
Chromium	3,763
Lead	63,007
Mercury	137
Zinc	4,674
Toluene	2.8
Xylene(s)	2.6
Naptha	21
Petroleum Hydrocarbons	10,300

<u>Surface Water</u>	
<u>Contaminant</u>	<u>Concentration (ppb)</u>
Benzene	15
Chlorobenzene	412
Trans Dichloroethene	155
Trichloroethylene	22

19. By entering this Administrative Consent Order, Respondents do not admit to any fact, fault or liability under any statute or regulation concerning the condition of the Site.

20. All of the Department's files concerning the Site are incorporated herein and made a part hereof.

21. The Department intends that the scope of the investigation and cleanup required by this Administrative Consent Order will include all contaminants at the above referenced Site, and all contaminants which are emanating from or which have emanated from the Site.

ORDER

I. Reimbursement of Prior Costs

22. Within thirty (30) calendar days after receipt of a written summary of the Department's costs incurred to the effective date of this Administrative Consent Order, Respondents shall submit payment to the Department for these costs, in connection with the investigation of, and response to, the matters described in the Findings hereinabove, including the costs associated with the preparation of this Administrative Consent Order. Respondents shall make payment

BASF

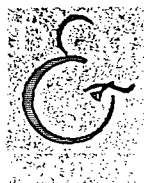
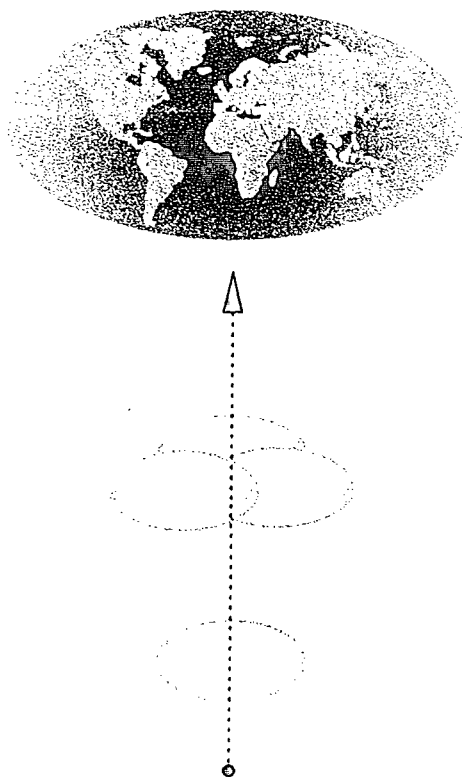
*Remedial Action Work Plan
for
BASF Corporation's
Kearny, New Jersey
Facility*

ISRA Case No. 90537

Prepared for:

BASF Corporation
Mt. Olive, New Jersey
&
New Jersey Department of
Environmental Protection
Trenton, New Jersey

October 1998



DAMES & MOORE

A DAMES & MOORE GROUP COMPANY

7. 1. 1972

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Analytical Results Summary for Groundwater
(June 1997)
BASF Corporation
Kearny, New Jersey

Analyte	Evaluation Criteria (ug/L)				Sample Locations and Results (ug/L)												
	Class IIA	PQL	SOC	GQS	MW-1	MW-2	MW-4	MW-5	MW-7	MW-8	MW-9	MW-10	MW-14	MW-15	MW-16	MW-17	MW-19
Volatile Organic Compounds																	
Benzene	0.2	1	NA	1	0.2 U	0.8	6.9	0.2 U	1.2 U	0.2 U	0.2 U	0.2 U	2.1	0.2 U	24 U	0.2 U	4.9
Isophorone	100	10	NA	100	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	17 U	1.7 U	1.7 U
Methylene Chloride	2	2	NA	2	1 U	1 U	1 U	1 U	5.2 U	1 U	1 U	1 U	1 U	1 U	100 U	1 U	1 U
Base Neutral Extractable Compounds																	
Benzo(a)anthracene	NL	10	100	100	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	2.4	0.8 U	0.8 U	0.8 U	0.8 U	8.4 U	0.8 U	0.8 U
Bis(2-Ethylhexyl)phthalate	3	30	NA	30	1.3	2.7	4.4	1.1 U	8.1	1.9	3.2	1.1 U	1.4	1.9	570	3.4	1.5
Naphthalene	300	NL	NA	300	2.5 U	2.5 U	2.5 U	2.5 U	21	2.5 U	2.7	2.5 U	2.5 U	2.5 U	25 U	2.5 U	18
Phenanthrene	NL	10	100	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U
Metals																	
Arsenic	0.02	8	NA	8	338	3.7	15.2	2.2 U	8.6	21.2	2.2 U	2.2 U	3.8	11.3	4.4 U	4.1	11.2
Chromium VI	NL	NL	NA	NL	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	21.8	10 U	10 U
Lead	5	10	NA	10	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	11.5	2.1 U	2.1 U	3.4	2.1 U	4.2 U	7.8	8.4
Mercury	2	0.5	NA	2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.13
Polychlorinated Biphenols																	
Aroclor-1016	0.02	0.5	NA	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.86
Aroclor-1221	0.02	0.5	NA	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.4 U
Aroclor-1232	0.02	0.5	NA	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.1 U
Aroclor-1242	0.02	0.5	NA	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.4 U
Aroclor-1248	0.02	0.5	NA	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.3 U
Aroclor-1254	0.02	0.5	NA	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.4 U
Aroclor-1260	0.02	0.5	NA	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0
Inorganics																	
Ammonia	500	200	NA	500	1200	4100	15600	3100	6900	8500	1900	430	13000	22800	17500	2300	4500

Explanations:

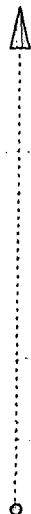
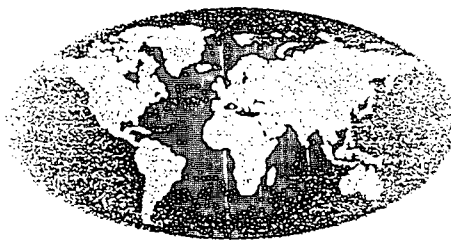
Class IIA- Most stringent groundwater criteria
PQL- Practical Quantitation Level
SOC- Synthetic Organic Compound
GQS- Groundwater Quality Standard
NE- Not Listed
NA- Not Applicable

Bold Indicates level exceeds GQS

*Remedial Management Plan
for
BASF Corporation's
Kearny, New Jersey
Chemical Manufacturing
Facility*

Prepared for:

BASF Corporation
Mount Olive, New Jersey
and
New Jersey Department of
Environmental Protection
Trenton, New Jersey



September 1996



DAMES & MOORE

BB00000001

TABLE 4-1 - Analytical Results Summary for Soil in Proposed Institutional Control Areas (PIC-1, 2, 3, 4)
BASF Corporation Kearny, New Jersey Facility

Dames & Moore

Revised 9-10-96

PIC-1 (continued)																		
Priority Pollutant Metals																		
Analyte	Total Count	Findings			NJDEP Cleanup Criteria			Other Avg. Criteria		Comparison to Criteria					Characteristics			
		Max	Min	Average	RDC	NRDC	ITG	Hist Fill	Backgrd	%<RDC	%<NRDC	%<ITG	%<Hist Fill	%<Bkgd.	Solubility	Log Kow	Mol Wt.	
Antimony	12	15	0	3	14.00	340.00	NL	NL	NL	91.7%	100.0%	NL	NL	NL	NL	NL	NL	
Arsenic	12	11	0	3	20.00	20.00	NL	13.15	124.40	100.0%	100.0%	NL	100.0%	100.0%	NL	NL	NL	
Beryllium	12	0	0	0	1.00	1.00	NL	1.23	NL	100.0%	100.0%	NL	100.0%	NL	NL	NL	NL	
Cadmium	12	1	0	0	1.00	100.00	NL	11.15	4.70	91.7%	100.0%	NL	100.0%	100.0%	NL	NL	NL	
Chromium	12	55	5	23	NL	NL	NL	100.00	1129.80	NL	NL	NL	100.0%	100.0%	NL	NL	NL	
Copper	12	92	1	47	600.00	600.00	NL	NL	447.20	100.0%	100.0%	NL	NL	100.0%	NL	NL	NL	
Lead	12	100	2	29	400.00	600.00	NL	574.00	812.80	100.0%	100.0%	NL	100.0%	100.0%	NL	NL	NL	
Mercury	12	1	0	0	14.00	270.00	NL	NL	NL	100.0%	100.0%	NL	NL	NL	NL	NL	NL	
Nickel	12	31	0	16	250.00	2400.00	NL	NL	65.20	100.0%	100.0%	NL	NL	100.0%	NL	NL	NL	
Selenium	12	0	0	0	63.00	3100.00	NL	NL	6.50	100.0%	100.0%	NL	NL	100.0%	NL	NL	NL	
Silver	12	1	0	0	110.00	4100.00	NL	NL	NL	100.0%	100.0%	NL	NL	NL	NL	NL	NL	
Thallium	12	1	0	0	2.00	2.00	NL	NL	NL	100.0%	100.0%	NL	NL	NL	NL	NL	NL	
Vanadium	1	17	17	17	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	
Zinc	12	232	2	71	1500.00	1500.00	NL	575.00	268.00	100.0%	100.0%	NL	100.0%	100.0%	NL	NL	NL	

TABLE 4-1 - Analytical Results Summary for Soil in Proposed Institutional Control Areas (PIC-1, 2, 3, 4)
BASF Corporation Kearny, New Jersey Facility

Damos & Moore

Revised 8-10-98

PIC-2 (continued)																		
Polychlorinated Biphenols																		
Analyte	Total Count	Findings			NJDEP Cleanup Criteria			Other Avg. Criteria		Comparison to Criteria					Characteristics			
		Max	Min	Average	RDC	NRDC	ITG	Hist. Fill	Backgrd	%<RDC	%<NRDC	%<ITG	%<Hist. Fill	%<Bkgrd	Solubility	Log Kow	Mol. Wt.	
Aroclor 1016	1	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Aroclor 1221	1	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Aroclor 1232	1	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Aroclor 1242	1	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Aroclor 1248	1	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Aroclor 1254	1	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	0.057000	6.03	328.40	
Aroclor 1260	1	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Priority Pollutant Metals																		
Analyte	Total Count	Findings			NJDEP Cleanup Criteria			Other Avg. Criteria		Comparison to Criteria					Characteristics			
		Max	Min	Average	RDC	NRDC	ITG	Hist. Fill	Backgrd	%<RDC	%<NRDC	%<ITG	%<Hist. Fill	%<Bkgrd	Solubility	Log Kow	Mol. Wt.	
Antimony	5	14	0	5	14.00	340.00	NL	NL	NL	100.0%	100.0%	NL	NL	NL	NL	NL	NL	
Arsenic	5	20	2	8	20.00	20.00	NL	13.15	124.40	100.0%	100.0%	NL	80.0%	100.0%	NL	NL	NL	
Beryllium	5	0	0	0	1.00	1.00	NL	1.23	NL	100.0%	100.0%	NL	100.0%	NL	NL	NL	NL	
Cadmium	5	1	0	0	1.00	100.00	NL	11.15	4.70	100.0%	100.0%	NL	100.0%	100.0%	NL	NL	NL	
Chromium	5	49	17	34	NL	NL	NL	100.00	1129.80	NL	NL	NL	100.0%	100.0%	NL	NL	NL	
Copper	5	125	36	68	600.00	600.00	NL	NL	447.20	100.0%	100.0%	NL	NL	100.0%	NL	NL	NL	
Lead	5	310	30	109	400.00	600.00	NL	574.00	812.80	100.0%	100.0%	NL	100.0%	100.0%	NL	NL	NL	
Mercury	5	1	0	0	14.00	270.00	NL	NL	NL	100.0%	100.0%	NL	NL	NL	NL	NL	NL	
Nickel	5	150	12	45	250.00	2400.00	NL	NL	65.20	100.0%	100.0%	NL	NL	80.0%	NL	NL	NL	
Selenium	5	1	0	0	83.00	3100.00	NL	NL	6.50	100.0%	100.0%	NL	NL	100.0%	NL	NL	NL	
Silver	5	0	0	0	110.00	4100.00	NL	NL	NL	100.0%	100.0%	NL	NL	NL	NL	NL	NL	
Thallium	5	0	0	0	2.00	2.00	NL	NL	NL	100.0%	100.0%	NL	NL	NL	NL	NL	NL	
Zinc	5	274	83	130	1500.00	1500.00	NL	575.00	296.00	100.0%	100.0%	NL	100.0%	100.0%	NL	NL	NL	

TABLE 4-2 - Analytical Results Summary for Soil in Proposed Active Remediation Areas (PAR-CTRL, NW, PCB, OTH, SE)
BASF Corporation Kearny, New Jersey Facility

Dames & Moore

Revised 9-10-99

PAR-NW (continued)																		
Pesticides, Herbicides, Insecticides																		
Analyte	Total Count	Findings			NJDEP Cleanup Criteria			Other Avg. Criteria		Comparison to Criteria					Characteristics			
		Max	Min	Average	RDC	NRDC	ITG	Hist. Fill	Backgrd	%<RDC	%<NRDC	%<ITG	%<Hist. Fill	%<Bkgrd	Solubility	Log Kow	Mol. Wt.	
4,4'-DDD	1	0	0	0	3.00	12.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
4,4'-DDE	1	0	0	0	2.00	9.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
4,4'-DDT	1	0	0	0	2.00	9.00	500.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Aldrin	1	0	0	0	0.04	0.17	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Alpha-BHC	1	0	0	0	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	
Beta-BHC	1	0	0	0	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	
Chlordane	1	0	0	0	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	
Delta-BHC	1	0	0	0	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	
Dieldrin	1	0	0	0	0.04	0.18	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Endosulfan I	1	0	0	0	340.00	6200.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Endosulfan II	1	0	0	0	340.00	6200.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Endosulfan sulfate	1	0	0	0	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	
Endrin	1	0	0	0	17.00	310.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Endrin aldehyde	1	0	0	0	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	
Gamma-BHC	1	0	0	0	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	
Heptachlor	1	0	0	0	0.15	0.65	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Heptachlor epoxide	1	0	0	0	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	
Toxaphene	1	0	0	0	0.10	0.20	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Polychlorinated Biphenols																		
Analyte	Total Count	Findings			NJDEP Cleanup Criteria			Other Avg. Criteria		Comparison to Criteria					Characteristics			
		Max	Min	Average	RDC	NRDC	ITG	Hist. Fill	Backgrd	%<RDC	%<NRDC	%<ITG	%<Hist. Fill	%<Bkgrd	Solubility	Log Kow	Mol. Wt.	
Aroclor 1016	1	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Aroclor 1221	1	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Aroclor 1232	1	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Aroclor 1242	1	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Aroclor 1248	1	1	1	1	0.49	2.00	50.00	NL	NL	0.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Aroclor 1254	1	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	0.057000	6.03	328.40	
Aroclor 1260	1	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Priority Pollutant Metals																		
Analyte	Total Count	Findings			NJDEP Cleanup Criteria			Other Avg. Criteria		Comparison to Criteria					Characteristics			
		Max	Min	Average	RDC	NRDC	ITG	Hist. Fill	Backgrd	%<RDC	%<NRDC	%<ITG	%<Hist. Fill	%<Bkgrd	Solubility	Log Kow	Mol. Wt.	
Antimony	5	0	0	0	14.00	340.00	NL	NL	NL	100.0%	100.0%	NL	NL	NL	NL	NL	NL	
Arsenic	6	13	1	6	20.00	20.00	NL	13.15	124.40	100.0%	100.0%	NL	100.0%	100.0%	NL	NL	NL	
Beryllium	6	0	0	0	1.00	1.00	NL	1.23	NL	100.0%	100.0%	NL	100.0%	NL	NL	NL	NL	
Cadmium	6	4	0	2	1.00	100.00	NL	11.15	4.70	50.0%	100.0%	NL	100.0%	100.0%	NL	NL	NL	
Chromium	5	46	10	21	NL	NL	NL	100.00	1129.80	NL	NL	NL	100.0%	100.0%	NL	NL	NL	
Copper	5	165	24	92	600.00	600.00	NL	NL	447.20	100.0%	100.0%	NL	NL	100.0%	NL	NL	NL	
Lead	5	440	22	187	400.00	600.00	NL	574.00	812.80	80.0%	100.0%	NL	100.0%	100.0%	NL	NL	NL	
Mercury	5	1	0	1	14.00	270.00	NL	NL	NL	100.0%	100.0%	NL	NL	NL	NL	NL	NL	
Nickel	5	17	7	13	250.00	2400.00	NL	NL	65.20	100.0%	100.0%	NL	NL	100.0%	NL	NL	NL	
Selenium	5	1	0	0	63.00	3100.00	NL	NL	6.50	100.0%	100.0%	NL	NL	100.0%	NL	NL	NL	
Silver	5	1	0	1	110.00	4100.00	NL	NL	NL	100.0%	100.0%	NL	NL	NL	NL	NL	NL	
Thallium	5	0	0	0	2.00	2.00	NL	NL	NL	100.0%	100.0%	NL	NL	NL	NL	NL	NL	
Vanadium	1	10	10	10	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	
Zinc	6	1070	22	249	1500.00	1500.00	NL	575.00	296.00	100.0%	100.0%	NL	83.3%	83.3%	NL	NL	NL	

TABLE 4-3 - Analytical Results Summary for Soil in Proposed Restricted Use Areas (PRU-REM & RR)
BASF Corporation Kearny, New Jersey Facility

Dames & Moore
Revised 9-10-96

PRU-REM (continued)																		
Polychlorinated Biphenols																		
Analyte	Total Count	Findings			NJDEP Cleanup Criteria			Other Avg. Criteria		Comparison to Criteria					Characteristics			
		Max	Min	Average	RDC	NRDC	ITG	Hist. Fill	Backgrd	%<RDC	%<NRDC	%<ITG	%<Hist. Fill	%<Bkgrd	Solubility	Log Kow	Mol. Wt	
Aroclor 1016	3	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Aroclor 1221	3	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Aroclor 1232	3	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Aroclor 1242	3	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Aroclor 1248	3	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Aroclor 1254	3	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	0.057000	6.03	328.40	
Aroclor 1260	3	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL	
Priority Pollutant Metals																		
Analyte	Total Count	Findings			NJDEP Cleanup Criteria			Other Avg. Criteria		Comparison to Criteria					Characteristics			
		Max	Min	Average	RDC	NRDC	ITG	Hist. Fill	Backgrd	%<RDC	%<NRDC	%<ITG	%<Hist. Fill	%<Bkgrd	Solubility	Log Kow	Mol. Wt	
Antimony	22	11	0	1	14.00	340.00	NL	NL	NL	100.0%	100.0%	NL	NL	NL	NL	NL	NL	
Arsenic	24	94	1	10	20.00	20.00	NL	13.15	124.40	91.7%	91.7%	NL	87.5%	100.0%	NL	NL	NL	
Beryllium	24	1	0	0	1.00	1.00	NL	1.23	NL	100.0%	100.0%	NL	100.0%	NL	NL	NL	NL	
Cadmium	24	3	0	1	1.00	100.00	NL	11.15	4.70	50.0%	100.0%	NL	100.0%	100.0%	NL	NL	NL	
Chromium	22	77	0	21	NL	NL	NL	100.00	1129.80	NL	NL	NL	100.0%	100.0%	NL	NL	NL	
Copper	22	297	4	73	600.00	600.00	NL	NL	447.20	100.0%	100.0%	NL	NL	100.0%	NL	NL	NL	
Lead	22	750	3	116	400.00	600.00	NL	574.00	812.80	86.0%	95.5%	NL	95.5%	100.0%	NL	NL	NL	
Mercury	22	2	0	0	14.00	270.00	NL	NL	NL	100.0%	100.0%	NL	NL	NL	NL	NL	NL	
Nickel	22	42	4	18	250.00	2400.00	NL	NL	65.20	100.0%	100.0%	NL	NL	100.0%	NL	NL	NL	
Selenium	22	2	0	0	63.00	3100.00	NL	NL	6.50	100.0%	100.0%	NL	NL	100.0%	NL	NL	NL	
Silver	22	4	0	1	110.00	4100.00	NL	NL	NL	100.0%	100.0%	NL	NL	NL	NL	NL	NL	
Thallium	22	1	0	0	2.00	2.00	NL	NL	NL	100.0%	100.0%	NL	NL	NL	NL	NL	NL	
Vanadium	2	16	8	12	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	
Zinc	24	1400	8	209	1500.00	1500.00	NL	575.00	296.00	100.0%	100.0%	NL	95.8%	75.0%	NL	NL	NL	

TABLE 4-3 - Analytical Results Summary for Soil in Proposed Restricted Use Areas (PRU-REM & RR)
BASF Corporation Kearny, New Jersey Facility

Dames & Moore
Revised 8-10-95

PRU-RR (continued)																	
Petroleum Hydrocarbons																	
Analyte	Total Count	Findings			NJDEP Cleanup Criteria			Other Avg. Criteria		Comparison to Criteria					Characteristics		
		Max	Min	Average	RDC	NRDC	ITG	Hist. Fill	Backgrd	%<RDC	%<NRDC	%<ITG	%<Hist. Fill	%<Bkgrd	Solubility	Log Kow	Mol. Wt.
Petroleum Hydrocarbons (IR)	21	6870	16	1173	10000.00	10000.00	10000.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL
Polychlorinated Biphenols																	
Analyte	Total Count	Findings			NJDEP Cleanup Criteria			Other Avg. Criteria		Comparison to Criteria					Characteristics		
		Max	Min	Average	RDC	NRDC	ITG	Hist. Fill	Backgrd	%<RDC	%<NRDC	%<ITG	%<Hist. Fill	%<Bkgrd	Solubility	Log Kow	Mol. Wt.
Aroclor 1016	2	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL
Aroclor 1221	2	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL
Aroclor 1232	2	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL
Aroclor 1242	2	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL
Aroclor 1248	2	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL
Aroclor 1254	2	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	0.057000	6.03	328.40
Aroclor 1260	2	0	0	0	0.49	2.00	50.00	NL	NL	100.0%	100.0%	100.0%	NL	NL	NL	NL	NL
Priority Pollutant Metals																	
Analyte	Total Count	Findings			NJDEP Cleanup Criteria			Other Avg. Criteria		Comparison to Criteria					Characteristics		
		Max	Min	Average	RDC	NRDC	ITG	Hist. Fill	Backgrd	%<RDC	%<NRDC	%<ITG	%<Hist. Fill	%<Bkgrd	Solubility	Log Kow	Mol. Wt.
Antimony	23	3380	0	150	14.00	340.00	NL	NL	NL	91.3%	95.7%	NL	NL	NL	NL	NL	NL
Arsenic	24	1810	0	230	20.00	20.00	NL	13.15	124.40	75.0%	75.0%	NL	58.3%	83.3%	NL	NL	NL
Beryllium	24	1	0	0	1.00	1.00	NL	1.23	NL	100.0%	100.0%	NL	100.0%	NL	NL	NL	NL
Cadmium	24	4	0	1	1.00	100.00	NL	11.15	4.70	45.8%	100.0%	NL	100.0%	100.0%	NL	NL	NL
Chromium	23	49	5	17	NL	NL	NL	100.00	1129.80	NL	NL	NL	100.0%	100.0%	NL	NL	NL
Copper	23	6100	5	448	600.00	600.00	NL	NL	447.20	91.3%	91.3%	NL	NL	87.0%	NL	NL	NL
Lead	23	37000	5	2175	400.00	600.00	NL	574.00	812.80	50.0%	73.8%	NL	69.6%	78.3%	NL	NL	NL
Mercury	23	4	0	1	14.00	270.00	NL	NL	NL	100.0%	100.0%	NL	NL	NL	NL	NL	NL
Nickel	23	86	1	19	250.00	2400.00	NL	NL	65.20	100.0%	100.0%	NL	NL	95.7%	NL	NL	NL
Selenium	23	6	0	1	63.00	3100.00	NL	NL	6.50	100.0%	100.0%	NL	NL	100.0%	NL	NL	NL
Silver	23	5	0	1	110.00	4100.00	NL	NL	NL	100.0%	100.0%	NL	NL	NL	NL	NL	NL
Thallium	23	1	0	0	2.00	2.00	NL	NL	NL	100.0%	100.0%	NL	NL	NL	NL	NL	NL
Vanadium	1	16	16	16	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL
Zinc	24	1790	6	457	1500.00	1500.00	NL	575.00	296.00	95.8%	95.8%	NL	75.0%	54.2%	NL	NL	NL

INDEX & NOTES: "0" Value for Maximum, Minimum, and Average Findings indicates that analyte levels were below the respective detection limits during the respective investigation Phase(s).

All results in mg/kg

RDC Residential Direct Contact
NRDC Non-Residential Direct Contact
ITG Impact to Groundwater

Indicates analytes found to have levels exceeding NRDC or ITG in at least one sample collected from region.

NL - Not Listed

Hist. Fill Historic fill average from Proposed NJAC 7.26E-4.5, Table 4-2 (2-20-96)
Backgrd. Background average from AT&T ECRA Case File (See Table 4-4)

Table 6-1 Analytical Results Summary for Phase III Soil Sampling
BASF Corporation Kearny, New Jersey Facility

Damen and Moore
Revised 6-4-95

PC-1 (continued)													
S600W200A	Di-n-octyl phthalate	03/01/95	U	mg/kg	0.37	0.00000	1100.00	10000.00	100.00	NL	NL	0.0	0.5
S600W200B	Di-n-octyl phthalate	03/01/95	U	mg/kg	0.37	0.00000	1100.00	10000.00	100.00	NL	NL	0.0	0.5
S600W200C	Di-n-octyl phthalate	03/01/95	U	mg/kg	0.36	0.00000	1100.00	10000.00	100.00	NL	NL	0.0	0.5
S600W200D	Di-n-octyl phthalate	03/01/95	U	mg/kg	0.37	0.00000	1100.00	10000.00	100.00	NL	NL	0.0	0.5
S600W200E	Di-n-octyl phthalate	03/01/95	U	mg/kg	0.37	0.00000	1100.00	10000.00	100.00	NL	NL	0.0	0.5
S300W100A	Di-n-octyl phthalate	03/02/95	U	mg/kg	0.36	0.00000	1100.00	10000.00	100.00	NL	NL	0.0	0.5
S300W100F	Di-n-octyl phthalate	03/02/95	U	mg/kg	0.37	0.00000	1100.00	10000.00	100.00	NL	NL	0.0	0.5
S600W200A	Diethyl phthalate	03/01/95	U	mg/kg	0.37	0.00000	10000.00	10000.00	50.00	NL	NL	0.0	0.5
S600W200B	Diethyl phthalate	03/01/95	U	mg/kg	0.37	0.00000	10000.00	10000.00	50.00	NL	NL	0.0	0.5
S600W200C	Diethyl phthalate	03/01/95	U	mg/kg	0.36	0.00000	10000.00	10000.00	50.00	NL	NL	0.0	0.5
S600W200D	Diethyl phthalate	03/01/95	U	mg/kg	0.37	0.00000	10000.00	10000.00	50.00	NL	NL	0.0	0.5
S600W200E	Diethyl phthalate	03/01/95	U	mg/kg	0.37	0.00000	10000.00	10000.00	50.00	NL	NL	0.0	0.5
S300W100A	Diethyl phthalate	03/02/95	U	mg/kg	0.36	0.00000	10000.00	10000.00	50.00	NL	NL	0.0	0.5
S300W100F	Diethyl phthalate	03/02/95	U	mg/kg	0.37	0.00000	10000.00	10000.00	50.00	NL	NL	0.0	0.5
S600W200A	Dimethyl phthalate	03/01/95	U	mg/kg	0.37	0.00000	10000.00	10000.00	50.00	NL	NL	0.0	0.5
S600W200B	Dimethyl phthalate	03/01/95	U	mg/kg	0.37	0.00000	10000.00	10000.00	50.00	NL	NL	0.0	0.5
S600W200C	Dimethyl phthalate	03/01/95	U	mg/kg	0.36	0.00000	10000.00	10000.00	50.00	NL	NL	0.0	0.5
S600W200D	Dimethyl phthalate	03/01/95	U	mg/kg	0.37	0.00000	10000.00	10000.00	50.00	NL	NL	0.0	0.5
S600W200E	Dimethyl phthalate	03/01/95	U	mg/kg	0.37	0.00000	10000.00	10000.00	50.00	NL	NL	0.0	0.5
S300W100A	Dimethyl phthalate	03/02/95	U	mg/kg	0.36	0.00000	10000.00	10000.00	50.00	NL	NL	0.0	0.5
S300W100F	Dimethyl phthalate	03/02/95	U	mg/kg	0.37	0.00000	10000.00	10000.00	50.00	NL	NL	0.0	0.5

Polynuclear Aromatic Hydrocarbons													
Sample Number	Analyte	Date	Qualifier	Units	DL	Result	NUDEP Cleanup Criteria			Other Criteria		Elevation	
							RDC	NRDC	ITC	Hot	Other	Background	Top
S300W100A	Acenaphthene	03/02/95	U	mg/kg	0.02	0.00000	3400.00	10000.00	100.00	NL	NL	0.0	0.5
S300W100F	Acenaphthene	03/02/95	U	mg/kg	0.02	0.00000	3400.00	10000.00	100.00	NL	NL	0.0	0.5
S300W100A	Acenaphthylene	03/02/95		mg/kg	0.00	0.03700	NL	NL	NL	NL	NL	0.0	0.5
S300W100F	Acenaphthylene	03/02/95	U	mg/kg	0.02	0.00000	NL	NL	NL	NL	NL	0.0	0.5
S300W100A	Anthracene	03/02/95		mg/kg	0.00	0.05000	10000.00	10000.00	100.00	NL	NL	0.0	0.5
S300W100F	Anthracene	03/02/95	U	mg/kg	0.02	0.00000	10000.00	10000.00	100.00	NL	NL	0.0	0.5
S300W100A	Benzo(a)anthracene	03/02/95		mg/kg	0.00	0.32000	0.90	4.00	500.00	1.37	NL	0.0	0.5
S300W100F	Benzo(a)anthracene	03/02/95	U	mg/kg	0.02	0.00000	0.90	4.00	500.00	1.37	NL	0.0	0.5
S300W100A	Benzo(a)pyrene	03/02/95		mg/kg	0.00	0.24000	0.66	0.66	100.00	1.89	NL	0.0	0.5
S300W100F	Benzo(a)pyrene	03/02/95	U	mg/kg	0.02	0.00000	0.66	0.66	100.00	1.89	NL	0.0	0.5
S300W100A	Benzo(b)fluoranthene	03/02/95		mg/kg	0.00	0.56000	0.90	4.00	50.00	1.91	NL	0.0	0.5
S300W100F	Benzo(b)fluoranthene	03/02/95	J	mg/kg	0.00	0.01200	0.90	4.00	50.00	1.91	NL	0.0	0.5
S300W100A	Benzo(ghi)perylene	03/02/95		mg/kg	0.00	0.05100	NL	NL	NL	NL	NL	0.0	0.5
S300W100F	Benzo(ghi)perylene	03/02/95	U	mg/kg	0.02	0.00000	NL	NL	NL	NL	NL	0.0	0.5
S300W100A	Benzo(k)fluoranthene	03/02/95		mg/kg	0.00	0.22000	1.00	4.00	500.00	1.79	NL	0.0	0.5
S300W100F	Benzo(k)fluoranthene	03/02/95	U	mg/kg	0.02	0.00000	1.00	4.00	500.00	1.79	NL	0.0	0.5
S300W100A	Chrysene	03/02/95		mg/kg	0.00	0.34000	9.00	40.00	500.00	NL	NL	0.0	0.5
S300W100F	Chrysene	03/02/95	U	mg/kg	0.02	0.00000	9.00	40.00	500.00	NL	NL	0.0	0.5
S300W100A	Dibenz(a,h)anthracene	03/02/95		mg/kg	0.00	0.01900	0.66	0.66	100.00	1.24	NL	0.0	0.5
S300W100F	Dibenz(a,h)anthracene	03/02/95	U	mg/kg	0.02	0.00000	0.66	0.66	100.00	1.24	NL	0.0	0.5
S300W100A	Fluoranthene	03/02/95		mg/kg	0.00	0.14000	2300.00	10000.00	100.00	NL	NL	0.0	0.5
S300W100F	Fluoranthene	03/02/95	U	mg/kg	0.02	0.00000	2300.00	10000.00	100.00	NL	NL	0.0	0.5
S300W100A	Fluorene	03/02/95	U	mg/kg	0.02	0.00000	2300.00	10000.00	100.00	NL	NL	0.0	0.5
S300W100F	Fluorene	03/02/95	U	mg/kg	0.02	0.00000	2300.00	10000.00	100.00	NL	NL	0.0	0.5
S300W100A	Indeno(1,2,3-c,d)pyrene	03/02/95		mg/kg	0.00	0.06600	0.90	4.00	500.00	1.41	NL	0.0	0.5
S300W100F	Indeno(1,2,3-c,d)pyrene	03/02/95	U	mg/kg	0.02	0.00000	0.90	4.00	500.00	1.41	NL	0.0	0.5
S300W100A	Naphthalene	03/02/95	U	mg/kg	0.02	0.00000	230.00	4200.00	100.00	NL	NL	0.0	0.5
S300W100F	Naphthalene	03/02/95	U	mg/kg	0.02	0.00000	230.00	4200.00	100.00	NL	NL	0.0	0.5
S300W100A	Phenanthrene	03/02/95	J	mg/kg	0.00	0.01700	NL	NL	NL	NL	NL	0.0	0.5
S300W100F	Phenanthrene	03/02/95	U	mg/kg	0.02	0.00000	NL	NL	NL	NL	NL	0.0	0.5
S300W100A	Pyrene	03/02/95		mg/kg	0.00	0.09000	1700.00	10000.00	100.00	NL	NL	0.0	0.5
S300W100F	Pyrene	03/02/95	U	mg/kg	0.02	0.00000	1700.00	10000.00	100.00	NL	NL	0.0	0.5

Priority Pollutant Metals													
Sample Number	Analyte	Date	Qualifier	Units	DL	Result	NUDEP Cleanup Criteria			Other Criteria		Elevation	
							RDC	NRDC	ITG	Met	Background	Top	Bottom
S300W100A	Arsimony	03/02/95	U	mg/kg	4.20	0.00000	14.00	340.00	NL	NL	NL	0.0	0.5
S300W100A	Arsenic	03/02/95		mg/kg	0.00	4.40000	20.00	20.00	NL	13.15	124.40	0.0	0.5
S300W100A	Beryllium	03/02/95		mg/kg	0.00	0.19000	1.00	1.00	NL	1.23	NL	0.0	0.5
S300W100A	Cadmium	03/02/95	U	mg/kg	0.40	0.00000	1.00	100.00	NL	11.15	4.70	0.0	0.5
S300W100A	Chromium	03/02/95		mg/kg	0.00	19.20000	NL	NL	NL	NL	1129.80	0.0	0.5
S300W100A	Copper	03/02/95		mg/kg	0.00	4.40000	800.00	800.00	NL	NL	447.20	0.0	0.5
S300W100A	Lead	03/02/95		mg/kg	0.00	8.70000	100.00	800.00	NL	574.00	812.80	0.0	0.5
S300W100A	Mercury	03/02/95	U	mg/kg	0.04	0.00000	14.00	270.00	NL	NL	NL	0.0	0.5
S300W100A	Nickel	03/02/95		mg/kg	0.00	2.25000	250.00	2400.00	NL	NL	85.20	0.0	0.5
S300W100A	Selenium	03/02/95		mg/kg	0.00	0.26000	83.00	3100.00	NL	NL	8.50	0.0	0.5
S300W100A	Silver	03/02/95	U	mg/kg	0.96	0.00000	110.00	4100.00	NL	NL	NL	0.0	0.5

Table 5-1 Analytical Results Summary for Phase III Soil Sampling
BASF Corporation Kearny, New Jersey Facility

Dames and Moore
Revised 9-4-94

PAR-AEM (continued)												
S100W200A	Pyrene	03/01/95	mg/kg	0.00	0.13000	1700.00	10000.00	100.00	NL	NL	0.0	0.5
S1100W000A	Pyrene	03/01/95	mg/kg	0.00	1.50000	1700.00	10000.00	100.00	NL	NL	0.0	0.5
S1100W100A	Pyrene	03/01/95	mg/kg	0.00	1.70000	1700.00	10000.00	100.00	NL	NL	1.5	2.0
S1200W000A	Pyrene	03/01/95	mg/kg	0.00	1.50000	1700.00	10000.00	100.00	NL	NL	0.0	0.5
S1300W000A	Pyrene	03/01/95	mg/kg	0.00	0.85000	1700.00	10000.00	100.00	NL	NL	0.0	0.5
S1400W000A	Pyrene	03/01/95	mg/kg	0.00	3.30000	1700.00	10000.00	100.00	NL	NL	0.0	0.5
S1100W200A	Pyrene	03/01/95	mg/kg	0.00	0.57000	1700.00	10000.00	100.00	NL	NL	0.0	0.5
S100W800A	Pyrene	03/02/95	mg/kg	0.00	0.36000	1700.00	10000.00	100.00	NL	NL	0.0	0.5

Petroleum Hydrocarbons												
Sample Number	Analyte	Date	Qualifier	Units	DL	Result	NJDEP Cleanup Criteria			Other Criteria		Elevation
							RDC	NRDC	ITG	Hot Fil	Background	
S400W800A	Petroleum Hydrocarbons (IR)	02/28/95		mg/kg	0.00	112.00000	10000.00	10000.00	10000.00	NL	NL	0.0 0.5
S400W800B	Petroleum Hydrocarbons (IR)	02/28/95		mg/kg	0.00	126.00000	10000.00	10000.00	10000.00	NL	NL	0.0 0.5
S400W800C	Petroleum Hydrocarbons (IR)	02/28/95		mg/kg	0.00	230.00000	10000.00	10000.00	10000.00	NL	NL	2.5 3.0
S500W800A	Petroleum Hydrocarbons (IR)	02/28/95		mg/kg	0.00	279.00000	10000.00	10000.00	10000.00	NL	NL	0.0 0.5
S600W800A	Petroleum Hydrocarbons (IR)	02/28/95		mg/kg	0.00	2580.00000	10000.00	10000.00	10000.00	NL	NL	0.0 0.5
S100W100A	Petroleum Hydrocarbons (IR)	02/27/95		mg/kg	0.00	482.00000	10000.00	10000.00	10000.00	NL	NL	0.0 0.5
S100W100B	Petroleum Hydrocarbons (IR)	02/27/95		mg/kg	0.00	217.00000	10000.00	10000.00	10000.00	NL	NL	0.0 0.5
S100W100C	Petroleum Hydrocarbons (IR)	02/27/95		mg/kg	0.00	1710.00000	10000.00	10000.00	10000.00	NL	NL	0.0 0.5
S100W100D	Petroleum Hydrocarbons (IR)	02/27/95		mg/kg	0.00	971.00000	10000.00	10000.00	10000.00	NL	NL	0.0 0.5
AEC13-1	Petroleum Hydrocarbons (IR)	03/01/95		mg/kg	0.00	509.00000	10000.00	10000.00	10000.00	NL	NL	0.0 0.5
AEC13-3	Petroleum Hydrocarbons (IR)	03/01/95	U	mg/kg	25.00	0.00000	10000.00	10000.00	10000.00	NL	NL	2.0 2.5
S600W700A	Petroleum Hydrocarbons (IR)	03/01/95		mg/kg	0.00	2360.00000	10000.00	10000.00	10000.00	NL	NL	0.0 0.5
S500W700A	Petroleum Hydrocarbons (IR)	03/01/95	U	mg/kg	25.00	0.00000	10000.00	10000.00	10000.00	NL	NL	5.5 6.0
S200W700A	Petroleum Hydrocarbons (IR)	03/01/95		mg/kg	0.00	833.00000	10000.00	10000.00	10000.00	NL	NL	0.0 0.5
S1000W000A	Petroleum Hydrocarbons (IR)	03/01/95		mg/kg	0.00	545.00000	10000.00	10000.00	10000.00	NL	NL	0.0 0.5
S1000W100A	Petroleum Hydrocarbons (IR)	03/01/95		mg/kg	0.00	101.00000	10000.00	10000.00	10000.00	NL	NL	0.0 0.5
S1000W200A	Petroleum Hydrocarbons (IR)	03/01/95		mg/kg	0.00	81.00000	10000.00	10000.00	10000.00	NL	NL	0.0 0.5
S1100W000A	Petroleum Hydrocarbons (IR)	03/01/95		mg/kg	0.00	204.00000	10000.00	10000.00	10000.00	NL	NL	0.0 0.5
S1100W100A	Petroleum Hydrocarbons (IR)	03/01/95		mg/kg	0.00	129.00000	10000.00	10000.00	10000.00	NL	NL	1.5 2.0
S1200W000A	Petroleum Hydrocarbons (IR)	03/01/95		mg/kg	0.00	8610.00000	10000.00	10000.00	10000.00	NL	NL	0.0 0.5
S1200W000A	Petroleum Hydrocarbons (IR)	03/01/95		mg/kg	0.00	428.00000	10000.00	10000.00	10000.00	NL	NL	0.0 0.5
S1400W000A	Petroleum Hydrocarbons (IR)	03/01/95		mg/kg	0.00	585.00000	10000.00	10000.00	10000.00	NL	NL	0.0 0.5
S1100W200A	Petroleum Hydrocarbons (IR)	03/01/95		mg/kg	0.00	267.00000	10000.00	10000.00	10000.00	NL	NL	0.0 0.5
S600W800A	Petroleum Hydrocarbons (IR)	03/02/95		mg/kg	0.00	733.00000	10000.00	10000.00	10000.00	NL	NL	2.5 3.0

Priority Pollutants Metals												
Sample Number	Analyte	Date	Qualifier	Units	DL	Result	NJDEP Cleanup Criteria			Other Criteria		Elevation
							RDC	NRDC	ITG	Hot Fil	Background	
S100W800A	Arsimony	03/02/95	U	mg/kg	4.60	0.00000	14.00	340.00	NL	NL	NL	0.0 0.5
S100W800A	Arsenic	03/02/95		mg/kg	0.00	6.80000	20.00	20.00	NL	13.15	124.40	0.0 0.5
S100W800A	Beryllium	03/02/95	U	mg/kg	0.70	0.00000	1.00	1.00	NL	1.23	NL	0.0 0.5
S100W800A	Cadmium	03/02/95	U	mg/kg	0.24	0.00000	1.00	100.00	NL	11.15	4.70	0.0 0.5
S100W800A	Chromium	03/02/95		mg/kg	0.00	17.70000	NL	NL	NL	NL	1129.80	0.0 0.5
S100W800A	Copper	03/02/95		mg/kg	0.00	83.60000	600.00	600.00	NL	NL	447.20	0.0 0.5
S100W800A	Lead	03/02/95		mg/kg	0.00	201.00000	100.00	600.00	NL	574.00	812.80	0.0 0.5
S100W800A	Mercury	03/02/95		mg/kg	0.00	1.20000	14.00	270.00	NL	NL	NL	0.0 0.5
S100W800A	Nickel	03/02/95		mg/kg	0.00	24.70000	250.00	2400.00	NL	NL	65.20	0.0 0.5
S100W800A	Selenium	03/02/95		mg/kg	0.00	0.66000	63.00	3100.00	NL	NL	6.50	0.0 0.5
S100W800A	Silver	03/02/95	U	mg/kg	1.00	0.00000	110.00	4100.00	NL	NL	NL	0.0 0.5
S100W800A	Thallium	03/02/95		mg/kg	0.00	0.80000	2.00	2.00	NL	NL	NL	0.0 0.5

Table 6-1 Analytical Results Summary for Phase III Soil Sampling
BASF Corporation Kearny, New Jersey Facility

James and Moore
Revised 1-4-94

PAR-R (continued)												
Sample Number	Analyte	Date	Qualifier	Units	DL	Result	ROD	NRD	ITG	Inst. Fil.	Background	Elevation
AEC21-ADD1A1	Isodiol (1,2,3-c, dipyrone)	02/27/95		mg/kg	0.00	0.03000	0.90	4.00	500.00	1.41	NL	0.0
AEC21-ADD4A2	Isodiol (1,2,3-c, dipyrone)	02/27/95		mg/kg	0.00	2.00000	0.90	4.00	500.00	1.41	NL	0.0
S000W500A	Isodiol (1,2,3-c, dipyrone)	03/01/95		mg/kg	0.00	0.63000	0.90	4.00	500.00	1.41	NL	0.0
S000W500B	Isodiol (1,2,3-c, dipyrone)	03/01/95		mg/kg	0.00	0.94000	0.90	4.00	500.00	1.41	NL	0.0
S000W1100A	Isodiol (1,2,3-c, dipyrone)	03/01/95		mg/kg	0.00	1.70000	0.90	4.00	500.00	1.41	NL	0.0
S000W1100B	Isodiol (1,2,3-c, dipyrone)	03/01/95		mg/kg	0.00	1.40000	0.90	4.00	500.00	1.41	NL	0.0
S000W1000	Isodiol (1,2,3-c, dipyrone)	03/01/95		mg/kg	0.00	0.03700	0.90	4.00	500.00	1.41	NL	0.0
S000W400A	Isodiol (1,2,3-c, dipyrone)	03/02/95		mg/kg	0.00	0.75000	0.90	4.00	500.00	1.41	NL	0.0
S000W400B	Isodiol (1,2,3-c, dipyrone)	03/02/95		mg/kg	0.00	0.49000	0.90	4.00	500.00	1.41	NL	0.0
S000W500A	Isodiol (1,2,3-c, dipyrone)	03/02/95		mg/kg	0.00	2.80000	0.90	4.00	500.00	1.41	NL	0.0
AEC21-ADD1A1	Naphthalene	02/27/95	U	mg/kg	0.03	0.00000	230.00	4200.00	100.00	NL	NL	0.0
AEC21-ADD4A2	Naphthalene	02/27/95		mg/kg	0.00	0.09900	230.00	4200.00	100.00	NL	NL	0.0
S000W500A	Naphthalene	03/01/95	U	mg/kg	0.02	0.00000	230.00	4200.00	100.00	NL	NL	0.0
S000W500B	Naphthalene	03/01/95		mg/kg	0.00	0.18000	230.00	4200.00	100.00	NL	NL	0.0
S000W1100A	Naphthalene	03/01/95	U	mg/kg	0.02	0.00000	230.00	4200.00	100.00	NL	NL	0.0
S000W1100B	Naphthalene	03/01/95		mg/kg	0.00	0.59000	230.00	4200.00	100.00	NL	NL	0.0
S000W1000	Naphthalene	03/01/95	U	mg/kg	0.02	0.00000	230.00	4200.00	100.00	NL	NL	0.0
S000W400A	Naphthalene	03/02/95	U	mg/kg	0.02	0.00000	230.00	4200.00	100.00	NL	NL	0.0
S000W400B	Naphthalene	03/02/95		mg/kg	0.00	0.10000	230.00	4200.00	100.00	NL	NL	0.0
S000W500A	Naphthalene	03/02/95		mg/kg	0.00	0.11000	230.00	4200.00	100.00	NL	NL	0.0
AEC21-ADD1A1	Phenanthrene	02/27/95		mg/kg	0.00	0.02700	NL	NL	NL	NL	NL	0.0
AEC21-ADD4A2	Phenanthrene	02/27/95		mg/kg	0.00	1.10000	NL	NL	NL	NL	NL	0.0
S000W500A	Phenanthrene	03/01/95		mg/kg	0.00	0.35000	NL	NL	NL	NL	NL	0.0
S000W500B	Phenanthrene	03/01/95		mg/kg	0.00	0.67000	NL	NL	NL	NL	NL	0.0
S000W1100A	Phenanthrene	03/01/95		mg/kg	0.00	1.10000	NL	NL	NL	NL	NL	0.0
S000W1100B	Phenanthrene	03/01/95		mg/kg	0.00	0.77000	NL	NL	NL	NL	NL	0.0
S000W1000	Phenanthrene	03/01/95		mg/kg	0.00	0.01800	NL	NL	NL	NL	NL	0.0
S000W400A	Phenanthrene	03/02/95		mg/kg	0.00	0.81000	NL	NL	NL	NL	NL	0.0
S000W400B	Phenanthrene	03/02/95		mg/kg	0.00	0.34000	NL	NL	NL	NL	NL	0.0
S000W500A	Phenanthrene	03/02/95		mg/kg	0.00	2.25000	NL	NL	NL	NL	NL	0.0
AEC21-ADD1A1	Pyrene	02/27/95		mg/kg	0.00	0.04700	1700.00	10000.00	100.00	NL	NL	0.0
AEC21-ADD4A2	Pyrene	02/27/95		mg/kg	0.00	3.40000	1700.00	10000.00	100.00	NL	NL	0.0
S000W500A	Pyrene	03/01/95		mg/kg	0.00	0.87000	1700.00	10000.00	100.00	NL	NL	0.0
S000W500B	Pyrene	03/01/95		mg/kg	0.00	1.80000	1700.00	10000.00	100.00	NL	NL	0.0
S000W1100A	Pyrene	03/01/95		mg/kg	0.00	5.20000	1700.00	10000.00	100.00	NL	NL	0.0
S000W1100B	Pyrene	03/01/95		mg/kg	0.00	2.50000	1700.00	10000.00	100.00	NL	NL	0.0
S000W1000	Pyrene	03/01/95		mg/kg	0.00	0.05900	1700.00	10000.00	100.00	NL	NL	0.0
S000W400A	Pyrene	03/02/95		mg/kg	0.00	1.40000	1700.00	10000.00	100.00	NL	NL	0.0
S000W400B	Pyrene	03/02/95		mg/kg	0.00	0.80000	1700.00	10000.00	100.00	NL	NL	0.0
S000W500A	Pyrene	03/02/95		mg/kg	0.00	6.10000	1700.00	10000.00	100.00	NL	NL	0.0
AEC21-ADD1A1	Antimony	02/27/95		mg/kg	0.00	9.50000	14.00	340.00	NL	NL	NL	0.0
S000W500A	Antimony	03/02/95	U	mg/kg	4.10	0.00000	14.00	340.00	NL	NL	NL	0.0
S000W700A	Antimony	03/02/95	U	mg/kg	4.80	0.00000	14.00	340.00	NL	NL	NL	0.0
AEC21-ADD1A1	Arsenic	02/27/95		mg/kg	0.00	13.50000	20.00	20.00	NL	13.15	124.40	0.0
S000W500A	Arsenic	03/02/95		mg/kg	0.00	4.50000	20.00	20.00	NL	13.15	124.40	0.0
S000W700A	Arsenic	03/02/95		mg/kg	0.00	8.20000	20.00	20.00	NL	13.15	124.40	0.0
AEC21-ADD1A1	Beryllium	02/27/95		mg/kg	0.00	0.72000	1.00	1.00	NL	1.23	NL	0.0
S000W500A	Beryllium	03/02/95		mg/kg	0.00	0.11000	1.00	1.00	NL	1.23	NL	0.0
S000W700A	Beryllium	03/02/95	U	mg/kg	0.35	0.00000	1.00	1.00	NL	1.23	NL	0.0
AEC21-ADD1A1	Cadmium	02/27/95	U	mg/kg	0.54	0.00000	1.00	100.00	NL	11.15	4.70	0.0
S000W500A	Cadmium	03/02/95	U	mg/kg	0.39	0.00000	1.00	100.00	NL	11.15	4.70	0.0
S000W700A	Cadmium	03/02/95	U	mg/kg	0.36	0.00000	1.00	100.00	NL	11.15	4.70	0.0
AEC21-ADD1A1	Chromium	02/27/95		mg/kg	0.00	19.70000	NL	NL	NL	NL	1129.80	0.0
S000W500A	Chromium	03/02/95		mg/kg	0.00	5.30000	NL	NL	NL	NL	1129.80	0.0
S000W700A	Chromium	03/02/95		mg/kg	0.00	16.80000	NL	NL	NL	NL	1129.80	0.0
AEC21-ADD1A1	Copper	02/27/95		mg/kg	0.00	289.00000	600.00	600.00	NL	NL	447.20	0.0
S000W500A	Copper	03/02/95		mg/kg	0.00	87.40000	600.00	600.00	NL	NL	447.20	0.0
S000W700A	Copper	03/02/95		mg/kg	0.00	145.00000	600.00	600.00	NL	NL	447.20	0.0
AEC21-ADD1A1	Lead	02/27/95		mg/kg	0.00	936.00000	100.00	600.00	NL	574.00	812.80	0.0
S000W500A	Lead	03/02/95		mg/kg	0.00	173.00000	100.00	600.00	NL	574.00	812.80	0.0
S000W700A	Lead	03/02/95		mg/kg	0.00	407.00000	100.00	600.00	NL	574.00	812.80	0.0
AEC21-ADD1A1	Mercury	02/27/95		mg/kg	0.00	2.90000	14.00	270.00	NL	NL	NL	0.0
S000W500A	Mercury	03/02/95		mg/kg	0.00	0.43000	14.00	270.00	NL	NL	NL	0.0
S000W700A	Mercury	03/02/95		mg/kg	0.00	1.50000	14.00	270.00	NL	NL	NL	0.0
AEC21-ADD1A1	Nickel	02/27/95		mg/kg	0.00	20.30000	250.00	2400.00	NL	NL	65.20	0.0
S000W500A	Nickel	03/02/95		mg/kg	0.00	8.00000	250.00	2400.00	NL	NL	65.20	0.0
S000W700A	Nickel	03/02/95		mg/kg	0.00	15.30000	250.00	2400.00	NL	NL	65.20	0.0
AEC21-ADD1A1	Selenium	02/27/95		mg/kg	0.00	1.80000	83.00	3100.00	NL	NL	6.50	0.0
S000W500A	Selenium	03/02/95		mg/kg	0.00	0.86000	83.00	3100.00	NL	NL	6.50	0.0
S000W700A	Selenium	03/02/95		mg/kg	0.00	0.59000	83.00	3100.00	NL	NL	6.50	0.0
AEC21-ADD1A1	Silver	02/27/95	U	mg/kg	1.30	0.00000	110.00	4100.00	NL	NL	NL	0.0
S000W500A	Silver	03/02/95	U	mg/kg	0.94	0.00000	110.00	4100.00	NL	NL	NL	0.0
S000W700A	Silver	03/02/95		mg/kg	0.00	1.10000	110.00	4100.00	NL	NL	NL	0.0
AEC21-ADD1A1	Thallium	02/27/95		mg/kg	0.00	0.77000	2.00	2.00	NL	NL	NL	0.0
S000W500A	Thallium	03/02/95	U	mg/kg	0.24	0.00000	2.00	2.00	NL	NL	NL	0.0
S000W700A	Thallium	03/02/95		mg/kg	0.00	0.31000	2.00	2.00	NL	NL	NL	0.0
AEC21-ADD1A1	Zinc	02/27/95		mg/kg	0.00	333.00000	1500.00	1500.00	NL	575.00	298.00	0.0
S000W500A	Zinc	03/02/95		mg/kg	0.00	235.00000	1500.00	1500.00	NL	575.00	298.00	0.0
S000W700A	Zinc	03/02/95		mg/kg	0.00	579.00000	1500.00	1500.00	NL	575.00	298.00	0.0

FACILITY REPORT (BRS DATA)
search used- Facility : ALL
City : ALL
State : ALL
EPA ID : NJD046941530
Year : 1991
Level of Detail: HIGH

Results:

This search was taken from RTK NET's (the Right-To-Know Network)'s copy of EPA's BRS database. RTK NET is run by OMB Watch at 1742 Connecticut Ave. NW, Washington DC 20009 Phone: 202-234-8494
The search was done on 09/17/2002.
This copy of the database was last updated on 05/29/2002.

Note: "Federal" waste is waste with at least one Federal EPA waste code.
Non-Federal waste is regulated by the state only.
"RCRA" waste is Federal waste that is managed (treated, disposed, or recycled) in a RCRA-permitted TSD unit. The waste is classified according to assumptions made about where it ends up.

If you don't see the words *END OF REPORT* at the end of this search, then this Web search didn't complete -- back up and try it again.

Facility Name: BASF CORPORATION CHEMICAL DV Reporting Year: 1991
Street : 50 CENTRAL AVE.
City : KEARNY State: NJ Zip: 070320000
County : HUDSON EPA ID: NJD046941530
Mailing Address: 50 CENTRAL AVE
Mailing City : KEARNY State: NJ Zip: 070320000
Year: 1991 Total Waste Federal Wst. RCRA Waste
Tons Generated : 293.63 111.83 111.83
Tons Shipped : 237.38 55.58 55.58
SIC Code(s): 2869
Contact: HOWARD ZLOTKIN Phone: 2013974654
Generator Status : Large Quantity Generator (LQG)
Storage Status : Containers
RCRA TDR Status : No on-site TDR; site has no plans to develop system
Exempt TDR Status: No on-site TDR; site has no plans to develop system

List of wastes generated by this facility:

Waste Desc.: PHTHALATE CLARIFIER SLUDGE FROM WASTEWATER TREATMENT PLANT C
 OMPOSED OF CARBON, WATER AND VARIOUS ORGANICS.
This is state-only waste (no Federal waste codes).
State waste code(s): NJC385
Tons Generated: 165.05
Tons Generated & Managed On-site: 0.00
This waste was sent off-site to-
MICHIGAN DISPOSAL, INC.
BELLEVILLE, MI
System type: M132
Tons sent: 165.05 EPA ID: MID000724831

Waste Desc.: HEEL FROM PHTHALIC ANHYDRIDE STORAGE TANK.
EPA Waste Code(s) for this generated waste-
U190 1,3-Isobenzofurandione or Phthalic anhydride

Tons Generated: 10.68
Tons Generated & Managed On-site: 0.00
This waste was sent off-site to-
ROLLINS ENVIRONMENTAL SERV
BRIDGEPORT, NJ
System type: M043
Tons sent: 6.84 EPA ID: NJD053288239

ADVANCED ENVIRONMENTAL
FLANDERS, NJ
System type: M141
Tons sent: 0.09 EPA ID: NJD980536593

Waste Desc.: VANADIUM CATALYST.
EPA Waste Code(s) for this generated waste-
P120 Vanadium oxide V2O5 or Vanadium pentoxide
Tons Generated: 58.34
Tons Generated & Managed On-site: 0.00
This waste was sent off-site to-
ROLLINS ENVIRONMENTAL SERVICES (LA) INC
BATON ROUGE, LA
System type: M043
Tons sent: 5.84 EPA ID: LAD010395127

Waste Desc.: STILL BOTTOMS FROM THE PRODUCTION OF PHTHALIC ANHYDRIDE FROM
ORTHO-XYLENE.
EPA Waste Code(s) for this generated waste-
K093 Distill. light ends from prod phthalic anhydride fr. ortho-xylene
K094 Distill. bottoms from prod. phthalic anhydride fr. ortho-xylene
Tons Generated: 40.07
Tons Generated & Managed On-site: 0.00
This waste was sent off-site to-
ROLLINS ENVIRONMENTAL SERV
BRIDGEPORT, NJ
System type: M041
Tons sent: 35.59 EPA ID: NJD053288239

ADVANCED ENVIRONMENTAL
FLANDERS, NJ
System type: M141
Tons sent: 4.48 EPA ID: NJD980536593

Waste Desc.: ABSORBENT CLOTH CONTIANING PHTHALATE COMPOUNDS FROM SITE DE-
COMMISSIONING.
EPA Waste Code(s) for this generated waste-
U028 Diethylhexyl phthalate
U069 1,2-Benzenedicarboxylic acid, dibutyl ester or Dibutyl phthalate
U190 1,3-Isobenzofurandione or Phthalic arthydride
Tons Generated: 0.15
Tons Generated & Managed On-site: 0.00
This waste was sent off-site to-
ROLLINS ENVIRONMENTAL SERV
BRIDGEPORT, NJ
System type: M043
Tons sent: 0.15 EPA ID: NJD053288239

Waste Desc.: FILTER BAGS FROM PROCESS OPERATIONS CONTAMINATED WITH PHTHALATES.

EPA Waste Code(s) for this generated waste-

U028 Diethylhexyl phthalate

U069 1,2-Benzenedicarboxylic acid, dibutyl ester or Dibutyl phthalate

U190 1,3-Isobenzofurandione or Phthalic anhydride

Tons Generated: 0.30

Tons Generated & Managed On-site: 0.00

This waste was sent off-site to-

ROLLINS ENVIRONMENTAL SERV

BRIDGEPORT, NJ

System type: M043

Tons sent: 0.30 EPA ID: NJD053288239

Waste Desc.: WASTE OIL FROM PLANT OPERATIONS AND WASTE OIL-CONTAMINATED D EBRIS/ABSORBENTS.

This is state-only waste (no Federal waste codes).

State waste code(s): NJX725 NJX726 NJX850 X900 X910

Tons Generated: 16.75

Tons Generated & Managed On-site: 0.00

This waste was sent off-site to-

MARISOL INC

MIDDLESEX, NJ

System type: M061

Tons sent: 4.40 EPA ID: NJD002454544

ADVANCED ENVIRONMENTAL

FLANDERS, NJ

System type: M141

Tons sent: 12.35 EPA ID: NJD980536593

Waste Desc.: LAB PACK CHEMICALS FROM DECOMMISSIONING OF FACILITY LABORATORY OPERATIONS.

EPA Waste Code(s) for this generated waste-

D001 Ignitable waste

D002 Corrosive waste

D005 Barium

D008 Lead

D009 Mercury

F002 Spent halogenated solvents (see 1991 Form)

P030 Cyanides (soluble cyanide salts), not otherwise specified

P048 2,4-Dinitrophenol or Phenol, 2,4-dinitro-

P120 Vanadium oxide V205 or Vanadium pentoxide

U102 Dimethyl phthalate

U112 Acetic acid ethyl ester (I) or Ethyl acetate (I)

U160 2-Butanone, peroxide (R,T) or Methyl ethyl ketone peroxide (R,T)

U211 Carbon tetrachloride or Methane, tetrachloro-

U239 Benzene, dimethyl- (I,T) or Xylene (I)

D007 Chromium

P077 Benzenamine, 4-nitro- or p-Nitroaniline

U220 Benzene, methyl- or Toluene

Tons Generated: 2.29

Tons Generated & Managed On-site: 0.00

This waste was sent off-site to-

ROLLINS ENVIRONMENTAL SERVICES (LA) INC

BATON ROUGE, LA

System type: M041

Tons sent: 0.45 EPA ID: LAD010395127

ADVANCED ENVIRONMENTAL
FLANDERS, NJ
System type: M141
Tons sent: 1.84 EPA ID: NJD980536593

END OF REPORT

BRESSLER, AMERY & ROSS

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(201) 514-1200

TELECOPIER (201) 514-1660

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325 COLUMBIA TURNPIKE
FLORHAM PARK, N. J. 07932

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90 BROAD STREET
NEW YORK, NEW YORK 10004
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ROGER V. JONES
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DANIEL T. KOPEC

January 28, 1994

Via Certified Mail; Return Receipt Requested

Mr. Lance R. Richman, P.G.
Emergency and Remedial Response Division
U.S. Environmental Protection Agency
26 Federal Plaza, Room 13-100
New York, New York 10278

Re: Request for Information - 42 U.S.C. §9601 et seq.
Diamond Alkali Superfund Site
Passaic River Study Area

Dear Mr. Richman:

I am enclosing herewith BASF Corporation's ("BASF") response to your request for information pursuant to 42 U.S.C. §9601 et seq., as it relates to the BASF facility formerly located at 50 Central Avenue, Kearny, Hudson County, New Jersey 07032. Please be advised that BASF is continuing the investigation in this matter and reserves the right to supplement and amend these answers as additional information becomes available.

If you have any questions concerning this response, please contact me directly.

Very truly yours,

David P. Schneider / fac

David P. Schneider

DPS/kmh
Enclosures
cc: Patricia C. Hick, Esq.

WRITER'S DIRECT LINE
1994 JAN 32 PM 2:19
ENVIRONMENTAL PROTECTION
AGENCY REGION II
ERND SITE COMPLIANCE
BRANCH

995000036

DASF CORPORATION
Kearny, New Jersey

Hazardous Substance and Waste Inventory

<u>Material Name</u>	<u>Location Reference</u>	<u>Container</u>	<u>Typical Usage*</u>	<u>To Remain On-Site</u>
Acetic Acid Glacial	QC Lab	Bottle	10	No
Acetone	QC Lab	Drum	12	No
Acetyl Chloride	QC Lab	Bottle	11	No
n-Propyl Acetate	QC Lab	Bottle	21	No
Ammonium Difluoride	Env Lab	Bottle	60	No
Ammonium Chloride	Env Lab	Bottle	60	No
Ammonium Hydroxide	QC/Env Lab	Bottle	11	No
Ammonium Carbonate	QC Lab	Bottle	11	No
n-Butyl Ether	QC Lab	Bottle	11	No
Acetylene	Storage Room	Cylinder	4380 CYL	No
Adhesives	Storage Room	Can	11	No
Adipic Acid	BEP Plant	Tank	16	No
Ammonia	PA Tank Farm	Tank	16	No
Ammonia Compound	WV Plant	Bag	14	No
Benzaldehyde	QC Lab	Bottle	11	No
Benzoic Acid	QC Lab	Bottle	11	No
Bisphenol A	BEP Plant	Bag	14	No
Butyric Acid	QC Lab	Bottle	11	No
Sulphuric Acid	Truck Shop	Can	11	No
Di(2-ethylhexyl)adipate	BEP Plant	Tank	13	No
Di(2-ethylhexyl)phthalate	DOP Tank Farm	Tank	17	No
n-Butanol	BEP Plant	Tank	14	No
Calcium Oxide	WVTP	Tank	16	No
Carbon Dioxide	Storage Room	Cylinder	2x365	No
Carbon Disulfide	Env Lab	Bottle	60	No
Carbon Tetrachloride	QC Lab	Bottle	11	No
Chromic Acid	Env Lab	Bottle	60	No
Cumene	QC Lab	Bottle	11	No
Cyclohexanol	QC Lab	Bottle	11	No
Cyclohexane	QC Lab	Bottle	11	No
1,4 Dioxane	QC Lab	Bottle	10	No

*The quantum of materials identified are typical annual usage for operations at the facility.

EXHIBIT B

<u>erial Name</u>	<u>Location Reference</u>	<u>Container</u>	<u>Typical Usage</u>	<u>To Remain On-Site</u>
Diazomethane	QC Lab	Bottle	10	No
Dimethyl Sulfate	QC Lab	Bottle	10	No
2,2-Diethoxyethanol	QC Lab	Bottle	10	No
Diethyl Ether	QC Lab	Can	10	No
Dimethyl Sulfate	QC Lab	Bottle	10	No
Ethyl Acetate	Env Lab	Bottle	09	No
Ethyl Alcohol	QC Lab	Drum	12	No
Ferric Chloride	Env Lab	Bottle	09	No
Formaldehyde	QC Lab	Bottle	09	No
Hexanes	QC Lab	Bottle	11	No
Isobutyraldehyde	QC Lab	Bottle	11	No
Isopropyl Alcohol	QC Lab	Bottle	10	No
Paint	Storage Room	Can	12	No
91-n-butyl Phthalate	BEP Plant	Tank	14	No
02 Fuel Oil	PA Boiler	Tank	17	No
Gasoline	Storage Room	Tank	13	No
Hazardous Waste	WWTP Storage	Drum/Tote Bin	14	No
Hydrazine	PA/CEP Plant	Drum	11	No
Hydrochloric Acid	Env(10)/Boiler	Tank	15	No
Hydrogen Peroxide	Env/BEP Plant	Tank	11	No
Maleic Anhydride	QC Lab	Bottle	10	No
Maleic Acid	QC Lab	Bottle	10	No
Nichloro Ethyl Ketone	QC Lab	Bottle	10	No
2-Methoxyethanol	QC Lab	Bottle	10	No
Methanol	QC Lab	Bottle	11	No
Dichloro Ethylene	QC Lab	Bottle	10	No
Trichloroethylene	QC Lab	Bottle	11	No
Dihyl Cyclohexane	QC Lab	Bottle	10	No
4,4-Isopropylidenediphenyl	BEP Plant	Bag	12	No
Mercury	Elec Shop/Lab	Bottle	10	No
Nitric Acid	Env Lab	Bottle	09	No
p-Nitroaniline	QC Lab	Bottle	09	No
o-Toluidine	QC Lab	Bottle	11	No
Phenol	QC Lab	Bottle	09	No
Phosphoric Acid	QC Lab	Bottle	10	No
Potassium Dichromate	QC Lab	Bottle	10	No

BASF CORPORATION

PHASE I and PHASE II DATA PRESENTATION
REPORTS

SUBMITTED TO NJDEP
in
NOVEMBER, 1991 and AUGUST, 1993

SOURCE: BASF's EPA 104(e) response dated Nov. 30, 1995

BASF Corporation
Kearny, New Jersey
ECRA Case #90537
Phase I Sampling Summary - AEC 17

Table 4.02.17-1

SAMPLE ID	NJDEPE Non- Residential Direct Contact Cleanup Standards	S AEC17-ADD1 0.5-1' 910312 FC2017	S AEC17-ADD2 0.5-1' 910312 FC2018	S AEC17ADD1B 0-0.5' AWT 910312 FC2020	S AEC17ADD2B 0-0.5' AWT 910312 FC2019
Toxaphene	200 ug/kg	< 220	< 230	< 230	< 240
Aroclor 1016	2000 ug/kg	< 55	< 57	< 58	< 60
Aroclor 1221	2000 ug/kg	< 55	< 57	< 58	< 60
Aroclor 1232	2000 ug/kg	< 55	< 57	< 58	< 60
Aroclor 1242	2000 ug/kg	< 55	< 57	< 58	< 60
Aroclor 1248	2000 ug/kg	< 55	< 57	< 58	< 60
Aroclor 1254	2000 ug/kg	< 110	< 110	< 120	< 120
Aroclor 1260	2000 ug/kg	137	< 110	< 120	< 120
INORGANICS					
Antimony	340000 ug/kg	< 6700	< 6800	< 6600	< 6800
Arsenic	2000 ug/kg	2500	3000	< 1100	1300
Beryllium	1000 ug/kg	230	< 110	< 110	< 110
Cadmium	100000 ug/kg	360	500	< 220	< 230
Chromium	ug/kg	47000	43000	7100	9100
Copper	600000 ug/kg	87000	72000	9500	13000
Lead	600000 ug/kg	64000	48000	7700	6200
Mercury	270000 ug/kg	280	130	210	120
Nickel	2400000 ug/kg	33000	23000	5700	5100
Selenium	3100000 ug/kg	< 560	< 570	< 550	< 570
Silver	4100000 ug/kg	< 1100	< 1100	< 1100	< 1100
Thallium	2000 ug/kg	< 1100	< 1100	< 1100	< 1100
Zinc	1500000 ug/kg	150000	110000	26000	22000

NOTE: Results preceded by a "<" symbol indicate that the result is a non-detect. The symbol is followed by the detection limit.

ABH000298

LE ID	NIDEPE	AEC21-1A				AEC21-1B				AEC21-2A			
DEPTH	Non-Residential Direct	0-0.5'				3.5-4'				0-0.5'			
LAB ID	Contact Soil Criteria	DAV810				DAV811				DAV807			
DATE	(ug/kg)	930630				930630				930630			
		QA	Result	Unit	MDL	QA	Result	Unit	MDL	QA	Result	Unit	MDL
Acenaphthene	10000000		360	ug/kg	160	ND	0	ug/kg	150	ND	0	ug/kg	140
2,4-Dinitrotoluene		ND	0	ug/kg	470	ND	0	ug/kg	460	ND	0	ug/kg	430
Diethyl phthalate	10000000	ND	0	ug/kg	820	ND	0	ug/kg	800	ND	0	ug/kg	760
Fluorene	10000000		365	ug/kg	160	ND	0	ug/kg	150	ND	0	ug/kg	140
4-Chlorophenyl phenyl ether		ND	0	ug/kg	350	ND	0	ug/kg	340	ND	0	ug/kg	320
1,2-Diphenylhydrazine		ND	0	ug/kg	820	ND	0	ug/kg	800	ND	0	ug/kg	760
N-Nitrosodiphenylamine	600000	ND	0	ug/kg	160	ND	0	ug/kg	150	ND	0	ug/kg	140
4-Bromophenyl phenyl ether		ND	0	ug/kg	160	ND	0	ug/kg	150	ND	0	ug/kg	140
Hexachlorobenzene	2000	ND	0	ug/kg	160	ND	0	ug/kg	150	ND	0	ug/kg	140
Phenanthrene			5450	ug/kg	440	BMDL	378	ug/kg	430		711	ug/kg	410
Anthracene	10000000		992	ug/kg	160	ND	0	ug/kg	150	ND	0	ug/kg	140
Di-n-butyl phthalate	10000000	BMDL	616	ug/kg	820	BMDL	272	ug/kg	800	BMDL	379	ug/kg	760
Fluoranthene	10000		8200	ug/kg	180	BMDL	175	ug/kg	180		957	ug/kg	170
Pyrene	10000		7550	ug/kg	160		158	ug/kg	150		989	ug/kg	140
Benzidine		ND	0	ug/kg	3600	ND	0	ug/kg	3500	ND	0	ug/kg	3300
Butyl benzyl phthalate	10000000	ND	0	ug/kg	820	ND	0	ug/kg	800	ND	0	ug/kg	760
Benzo(a)anthracene	4000		3560	ug/kg	640	ND	0	ug/kg	630	BMDL	404	ug/kg	590
Chrysene	40000		4060	ug/kg	210	BMDL	168	ug/kg	200		582	ug/kg	190
3,3'-Dichlorobenzidine	6000	ND	0	ug/kg	1360	ND	0	ug/kg	1320	ND	0	ug/kg	1250
bis(2-Ethylhexyl)phthalate	210000	BMDL	447	ug/kg	820	BMDL	649	ug/kg	800		1390	ug/kg	760
Di-n-octyl phthalate	10000000	ND	0	ug/kg	820	ND	0	ug/kg	800	ND	0	ug/kg	760
(b)fluoranthene	4000		5560	ug/kg	400	ND	0	ug/kg	380		982	ug/kg	360
(k)fluoranthene	4000	ND	0	ug/kg	210	ND	0	ug/kg	200	ND	0	ug/kg	190
(a)pyrene	660		3430	ug/kg	210	ND	0	ug/kg	200		426	ug/kg	190
Indeno(1,2,3-c,d)pyrene	4000		1720	ug/kg	390	ND	0	ug/kg	380	ND	0	ug/kg	360
Dibenzo(a,h)anthracene	660		625	ug/kg	210	ND	0	ug/kg	200	ND	0	ug/kg	190
Benzo(ghi)perylene			1600	ug/kg	340	ND	0	ug/kg	330	ND	0	ug/kg	310
Phenol	10000000	Parameters Not Analyzed				Parameters Not Analyzed				Parameters Not Analyzed			
2-Chlorophenol	5200000												
2-Nitrophenol													
2,4-Dimethylphenol	10000000												
2,4-Dichlorophenol	3100000												
p-Chloro-m-cresol													
2,4,6-Trichlorophenol	270000												
2,4-Dinitrophenol	2100000												
4-Nitrophenol													
4,6-Dinitro-o-cresol													
Pentachlorophenol	24000												
Aroclor 1015	2000												
Aroclor 1221	2000												
Aroclor 1242	2000												
Aroclor 1248	2000												
Aroclor 1254	2000												
Aroclor 1260	2000												
Aroclor 1232	2000												
INORGANICS													
Antimony	340000		3380000	ug/kg	7100	BMDL	7400	ug/kg	7600	BMDL	3900	ug/kg	7100
Arsenic	2000		128000	ug/kg	1200		7600	ug/kg	1300		5700	ug/kg	1200
Barium	1000		520	ug/kg	120		340	ug/kg	130		480	ug/kg	120
Bismuth	100000		610	ug/kg	590	BMDL	480	ug/kg	640		630	ug/kg	590
Cadmium			49000	ug/kg	1200		5400	ug/kg	1300		35000	ug/kg	1200
Chromium	600000		6100000	ug/kg	1200		74000	ug/kg	1300		203000	ug/kg	1200
Copper	600000		4E+07	ug/kg	5300		13000	ug/kg	5700		200000	ug/kg	5300
Lead	600000		2200	ug/kg	94	BMDL	91	ug/kg	100		390	ug/kg	95
Mercury	270000												

AD1000315

PLE ID	N/DEPE	AEC21-2B				AEC21-3A				AEC21-3B			
TH	Non-Residential Direct	3.5-4'				0-0.5'				3.5-4'			
LAB ID	Contact Soil Criteria	DAV806				DAV804				DAV805			
DATE	(ug/kg)	930630				930630				930630			
		QA	Result	Unit	MDL	QA	Result	Unit	MDL	QA	Result	Unit	MDL
Acenaphthene	10000000		274	ug/kg	150	ND	0	ug/kg	150		238	ug/kg	150
2,4-Dinitrotoluene		ND	0	ug/kg	460	ND	0	ug/kg	450	ND	0	ug/kg	440
Diethyl phthalate	10000000	ND	0	ug/kg	810	ND	0	ug/kg	790	ND	0	ug/kg	770
Fluorene	10000000		295	ug/kg	150	ND	0	ug/kg	150		298	ug/kg	150
4-Chlorophenyl phenyl ether		ND	0	ug/kg	340	ND	0	ug/kg	330	ND	0	ug/kg	320
1,2-Diphenylhydrazine		ND	0	ug/kg	810	ND	0	ug/kg	790	ND	0	ug/kg	770
N-Nitrosodiphenylamine	600000	ND	0	ug/kg	150	ND	0	ug/kg	150	ND	0	ug/kg	150
4-Bromophenyl phenyl ether		ND	0	ug/kg	150	ND	0	ug/kg	150	ND	0	ug/kg	150
Hexachlorobenzene	2000	ND	0	ug/kg	150	ND	0	ug/kg	150	ND	0	ug/kg	150
Phenanthrene			2660	ug/kg	440	BMDL	301	ug/kg	430		2540	ug/kg	410
Anthracene	10000000		624	ug/kg	150	ND	0	ug/kg	150		341	ug/kg	150
Di-n-butyl phthalate	10000000	BMDL	537	ug/kg	810	BMDL	583	ug/kg	790	BMDL	542	ug/kg	770
Fluoranthene	10000		4460	ug/kg	180		270	ug/kg	170		2590	ug/kg	170
Pyrene	10000		3740	ug/kg	150		260	ug/kg	150		2590	ug/kg	150
Benzidine		ND	0	ug/kg	3600	ND	0	ug/kg	3500	ND	0	ug/kg	3400
Butyl benzyl phthalate	10000000	ND	0	ug/kg	810	ND	0	ug/kg	790	ND	0	ug/kg	770
Benzo(a)anthracene	4000		2050	ug/kg	630	BMDL	144	ug/kg	620		1080	ug/kg	600
Chrysene	40000		2920	ug/kg	200		367	ug/kg	200		1430	ug/kg	190
3,3'-Dichlorobenzidine	6000	ND	0	ug/kg	1340	ND	0	ug/kg	1310	ND	0	ug/kg	1260
bis(2-Ethylhexyl)phthalate	210000		1040	ug/kg	810		1810	ug/kg	790		2430	ug/kg	770
Di-n-octyl phthalate	10000000	ND	0	ug/kg	810	ND	0	ug/kg	790	ND	0	ug/kg	770
2(b)fluoranthene	4000		4750	ug/kg	390	BMDL	255	ug/kg	380		1900	ug/kg	370
2(k)fluoranthene	4000	ND	0	ug/kg	200	ND	0	ug/kg	200	ND	0	ug/kg	190
2(a)pyrene	660		1380	ug/kg	200	BMDL	114	ug/kg	200		1150	ug/kg	190
Benzo(1,2,3-c,d)pyrene	4000		1910	ug/kg	380	ND	0	ug/kg	370		446	ug/kg	360
Dibenzo(a,h)anthracene	660		675	ug/kg	200	ND	0	ug/kg	200	BMDL	182	ug/kg	190
Benzo(ghi)perylene			2180	ug/kg	330	ND	0	ug/kg	330		413	ug/kg	310
Phenol	10000000												
2-Chlorophenol	5200000												
2-Nitrophenol													
2,4-Dimethylphenol	10000000												
2,4-Dichlorophenol	3100000												
p-Chloro-m-cresol													
2,4,6-Trichlorophenol	270000												
2,4-Dinitrophenol	2100000												
4-Nitrophenol													
4,6-Dinitro-o-cresol													
Pentachlorophenol	24000												
Aroclor 1016	2000												
Aroclor 1221	2000												
Aroclor 1242	2000												
Aroclor 1248	2000												
Aroclor 1254	2000												
Aroclor 1260	2000												
Aroclor 1232	2000												
INORGANICS													
Antimony	340000		11000	ug/kg	7300		17000	ug/kg	7000		9700	ug/kg	6900
Arsenic	2000		44000	ug/kg	1200		1810000	ug/kg	1200		23000	ug/kg	1100
Barium	1000		350	ug/kg	120		240	ug/kg	120		370	ug/kg	110
Bismuth	1000000	BMDL	480	ug/kg	610	BMDL	500	ug/kg	580		600	ug/kg	570
Chromium			7500	ug/kg	1200		7000	ug/kg	1200		18000	ug/kg	1100
Copper	600000		100000	ug/kg	1200		95000	ug/kg	1200		136000	ug/kg	1100
Lead	600000		2500000	ug/kg	5500		490000	ug/kg	5300		190000	ug/kg	5100
Mercury	270000		620	ug/kg	98		1500	ug/kg	94		450	ug/kg	91

ARH000318

LE ID	NJDEPE	AEC21-4A				AEC21-4B			
LAB ID	Non-Residential Direct	0-0.5'				3.5-4'			
DATE	Contact Soil Criteria	DAV808				DAV809			
	(ug/kg)	930630				930630			
		QA	Result	Unit	MDL	QA	Result	Unit	MDL
Aceraphilene	10000000		3010	ug/kg	160		414	ug/kg	160
2,4-Dinitrotoluene		ND	0	ug/kg	470	ND	0	ug/kg	480
Diethyl phthalate	10000000	ND	0	ug/kg	820	ND	0	ug/kg	840
Fluorene	10000000		5700	ug/kg	160		515	ug/kg	160
4-Chlorophenyl phenyl ether		ND	0	ug/kg	350	ND	0	ug/kg	350
1,2-Diphenylhydrazine		ND	0	ug/kg	820	ND	0	ug/kg	840
N-Nitrosodiphenylamine	600000	ND	0	ug/kg	160	ND	0	ug/kg	160
4-Bromophenyl phenyl ether		ND	0	ug/kg	160	ND	0	ug/kg	160
Hexachlorobenzene	2000	ND	0	ug/kg	160	ND	0	ug/kg	160
Phenanthrene			16500	ug/kg	440		1420	ug/kg	460
Anthracene	10000000		5050	ug/kg	160		261	ug/kg	160
Di-n-butyl phthalate	10000000	BMDL	472	ug/kg	820	BMDL	684	ug/kg	840
Fluoranthene	10000		17700	ug/kg	130		1000	ug/kg	190
Pyrene	10000		15900	ug/kg	160		725	ug/kg	160
Benidine		ND	0	ug/kg	3600	ND	0	ug/kg	3700
Butyl benzyl phthalate	10000000	ND	0	ug/kg	820	ND	0	ug/kg	840
Benzo(a)anthracene	4000		6430	ug/kg	640	BMDL	212	ug/kg	660
Chrysene	40000		6850	ug/kg	210		345	ug/kg	210
3,3'-Dichlorobenzidine	6000	ND	0	ug/kg	1360	ND	0	ug/kg	1390
bis(2-Ethylhexyl)phthalate	210000		1260	ug/kg	820		981	ug/kg	840
Di-n-octyl phthalate	10000000	ND	0	ug/kg	820	ND	0	ug/kg	840
(b)fluoranthene	4000		9010	ug/kg	390	BMDL	239	ug/kg	410
Benzo(k)fluoranthene	4000	ND	0	ug/kg	210	ND	0	ug/kg	210
(a)pyrene	660		5140	ug/kg	210	BMDL	103	ug/kg	210
Indeno(1,2,3-c,d)pyrene	4000		2580	ug/kg	390	BMDL	71.2	ug/kg	400
Dibenzo(a,h)anthracene	660		907	ug/kg	210	ND	0	ug/kg	210
Benzo(ghi)perylene			2440	ug/kg	340	ND	0	ug/kg	350
Phenol	10000000	Parameters Not Analyzed				Parameters Not Analyzed			
2-Chlorophenol	5200000								
2-Nitrophenol									
2,4-Dimethylphenol	10000000								
2,4-Dichlorophenol	3100000								
p-Chloro-m-cresol									
2,4,6-Trichlorophenol	270000								
2,4-Dinitrophenol	2100000								
4-Nitrophenol									
4,6-Dinitro-o-cresol									
Pentachlorophenol	24000								
Aroclor 1015	2000								
Aroclor 1221	2000								
Aroclor 1242	2000								
Aroclor 1243	2000								
Aroclor 1254	2000								
Aroclor 1260	2000								
Aroclor 1232	2000								
INORGANICS									
Antimony	340000		9300	ug/kg	7500		10000	ug/kg	7800
Arsenic	2000		17000	ug/kg	1200		1760000	ug/kg	1300
Bismuth	1000		640	ug/kg	120		230	ug/kg	130
Cadmium	100000		2100	ug/kg	620	ND	0	ug/kg	650
Chromium			29000	ug/kg	1200		4800	ug/kg	1300
Copper	600000		365000	ug/kg	1200		27000	ug/kg	1300
Lead	600000		3200000	ug/kg	5600		100000	ug/kg	5800
Mercury	270000		4000	ug/kg	100	BMDL	82	ug/kg	100

Table 4.04.3-1

BASF Corporation: Kearny, New Jersey

ECRA Case #90537

Monitoring Well Data - January, 1991

SAMPLE ID DATE LAB ID	NJDEPE - Higher of PQLs and Ground Water Quality Criteria	W MW-10 910117 FB9836/9844	W MW-11 910117 FB9835/9843	W MW-14 910117 FB9834/9842	W MW15RD1 910115 FB9707/9715	W MW-17 910117 FB9841					
Aroclor 1242	0.5 ug/l	< .51	< .54	< .57	< .57	-					
Aroclor 1254	0.5 ug/l	< 1.0	< 1.1	< 1.1	< 1.1	-					
Aroclor 1260	0.5 ug/l	< 1.0	< 1.1	< 1.1	< 1.1	-					
Aroclor 1248	0.5 ug/l	< .51	< .54	< .57	< .57	-					
Aroclor 1232	0.5 ug/l	< .51	< .54	< .57	< .57	-					
Aroclor 1221	0.5 ug/l	< .51	< .54	< .57	< .57	-					
Aroclor 1016	0.5 ug/l	< .51	< .54	< .57	< .57	-					
Groundwater Conventional											
Chloride	250 mg/l	20.4	232	97.8	31.7	-					
Sulfate as SO4	250 mg/l	7.9	< 5.0	10	< 5.0	-					
Phenolics, Total	NA mg/l	< .050	< .050	< .050	< .050	-					
Cyanide, Total	0.2 mg/l	-	-	-	< .025	-					
pH	6.5-8.5 std	7.78	7.31	8.55	7.09	-					
pH	6.5-8.5 std	7.79	7.32	8.56	7.09	-					
INORGANICS, XYLENES											
Ammonia as N	0.5 mg/l	0.69	3	3.6	31	-					
Antimony, Total	20 ug/l	< 60	< 60	< 60	< 60	-					
Arsenic, Total	8 ug/l	< 10	17	< 10	11	-					
Beryllium, Total	20 ug/l	< 1.0	< 1.0	< 1.0	< 1.0	-					
Cadmium, Total	4 ug/l	< 2.0	< 2.0	< 2.0	< 2.0	-					
Chromium, Total	100 ug/l	< 10	< 10	30	86	-					
Copper, Total	1000 ug/l	< 10	< 10	< 10	32	-					
Lead, Total	10 ug/l	< 5.0	< 5.0	15	39	-					
Lead, Dissolved	10 ug/l	< 5.0	< 5.0	29	< 5.0	< 5.0					
Mercury, Total	2 ug/l	< .20	< .20	0.31	0.63	-					
Nickel, Total	100 ug/l	< 20	< 20	< 20	< 20	-					
Petroleum Hydrocarbons (TR)	none visible mg/l	< 1.0	2.6	< 1.1	< 1.1	-					
Petroleum Hydrocarbons(heavy)	none visible mg/l	-	-	-	-	-					
Petroleum Hydrocarbons(light)	none visible mg/l	-	-	-	-	-					
Petroleum Hydrocarbons(medium)	none visible mg/l	-	-	-	-	-					
Selenium, Total	50 ug/l	< 5.0	< 5.0	< 5.0	< 5.0	-					
Silver, Total	NA ug/l	< 10	< 10	< 10	< 10	-					
Sodium, Dissolved	50000 ug/l	-	-	-	-	-					
Thallium, Total	10 ug/l	< 10	< 10	< 10	< 10	-					
Total Dissolved Solids (TDS)	500 mg/l	300	620	940	580	-					
Zinc, Total	5000 ug/l	< 20	< 20	28	84	-					
m-Xylene	NA ug/l	-	-	-	-	-					
p-Xylene	NA ug/l	-	-	-	-	-					

Notes:

Results preceded by a "<" symbol indicate that the result is a non-detect. The symbol is followed by the detection limit.
 The "-" symbol indicates that analysis was not performed for a given analyte.

**Bayonne Barrel &
Drum Co.**



GEOLOGICAL RECLAMATION
OPERATIONS AND WASTE
SYSTEMS, INC. (G.R.O.W.S.)

Division of Waste Resources Corporation

Bordentown and New Ford Mill Road, Falls Township, Post Office Box 180, Morrisville, PA 19067
Phone: (215) 295-0925

LIQUID and/or CHEMICAL WASTE CERTIFICATION
To
Geological Reclamation Operations and Waste Systems, Inc.

THE UNDERSIGNED, hereby certifies, represents and warrants that it is the generator and source of the liquid and/or chemical waste referred to and having the chemical characteristics set forth and described in the Waste Quality Analysis dated 1-27-78 and bearing G. R. O. W. S. ID. No. D-51 a signed copy of which is attached herewith.

It is hereby represented, warranted and agreed by the Undersigned to indemnify and hold "Geological Reclamation Operations and Waste Systems, Inc.", its officers, directors, stockholders, employees and representatives harmless of and from any and all manner of liability, claim, cause of action, damage, expense, penalty or fine which G. R. O. W. S. or any of its officers, directors, stockholders, employees and representatives, or any of them, may at any time hereinafter incur by reason of or arising out of the disposal by or on behalf of the Undersigned of any liquid and/or chemical waste material which shall have chemical characteristics which have any material deviation from those referred to on the Waste Quality Analysis attached hereto.

It is further acknowledged and agreed that should the liquid and/or chemical waste disposed of by or on behalf of the Undersigned contain chemical characteristics which have any material deviation from those disclosed on the Waste Control Analysis that G. R. O. W. S. retains the full right and discretion of rejecting for disposal any further liquid and/or chemical waste generated or produced by the Undersigned.

Company Bayonne Barrel & Drum CO.
(Print or Type)

Telephone No. 201-589-0110

Authorized Agent Andrew Langella
(Print or Type)

Signature and Title _____

Date _____



AGES Applied Geotechnical and Environmental Service Corp.
215 S. Broad St., Suite 902, Phila., Pa. 19107

WASTE QUALITY ANALYSIS

Testing Company ENVIRO/EARTH

Sample Date: 1/-/78

R. L. Steiner

AGES ID: 42876-186

ANALYSES	UNITS	1	2	3
Iron	mg/l	4.11	---	---
COD	"	10,400	---	---
Ammonia Nitrogen	"	53.3	---	---
Oil & Grease	"	265.5	---	---
Zinc	"	9.5	---	---
Copper	"	1.03	---	---
Cadmium	"	.48	---	---
Chromium	"	.53	---	---
Lead	"	3.1	---	---
Mercury	"	3.6	---	---
Phenol	"	11.75	---	---
Cadmium	ppm	---	2.7	---
Lead	"	---	1303	---
Mercury	"	---	82	---
Density	lbs/yd ³	---	---	2360
Moisture Content	%	---	---	30

IDENTIFICATION OF SAMPLES:

- AGES 1. Bayonne Drum Co. - Elutriation
2. " " " - Total Concentration
3. " " " - Physical Parameters

Generator: Bayonne Barrel & Drum Co.

Pickup Address: 150 Raymond Blvd. Newark
(No.) (Street) (City) (State)

Waste Stream ID: _____

GROWS ID NO: D--51

Reviewed by: _____

Title: _____

Date: ATTACHMENT F-2

Company: _____

Was done by BB & D

S & W Waste, Inc.

25 DELMAR ROAD
JERSEY CITY, N. J. 07305

Tel. 344-4004

ANALYSIS

Copper	14.5 ppm
Nickel	.01 ppm
Sulfate	2313 ppm
Chromium	trace
Iron	trace
Zinc	1.03 ppm
Manganese	trace
Lead	.5 ppm
Cadmium	no
Aluminum	less than 1 ppm
Arsenic	less than 1 ppm
% moisture	10.3%
% solid's	89.7%

*This analysis was performed by Mr. Anthony Cirello at:

Plater's Testing Lab.
523 Longwood Ave.
Boundbrook, N.J. 08805
276-8484

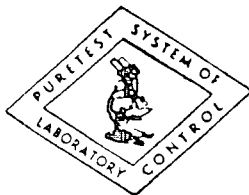
ATTACHMENT F-3

GARDEN STATE LABORATORIES, INC.

Bacteriological and Chemical Testing

399 Stuyvesant Avenue

Irvington, N.J. 07111



MATHEW KLEIN, M.S., Director

Telephone
201-373-8C07

S&W Waste
Kearny, NJ

sample submitted Nov. 16, 1979
Bayonne Barrel #2

% solids 81.34 % wet weight

pH, standard units 6.20

	<u>leachate</u>		<u>solid</u>
	<u>mg/l</u>	<u>mg/kg original weight</u>	<u>mg/kg dry weight</u>
phenol	0.588	4.78	18.9
arsenic	<0.001	<0.01	0.113
cadmium	0.060	0.49	<u>75.33</u>
chromium	<0.014	<0.11	<u>771.1</u>
copper	0.083	0.68	608.6
iron	0.209	1.70	21,970.
mercury	0.0041	0.033	<u>22.93</u>
lead	0.607	4.94	<u>31,205.</u>
nickel	0.095	0.77	72.67
zinc	6.739	54.82	2310.
selenium	<0.004	<0.033	0.080
oil/grease	63.	512.	41.25% dry weight

leached at pH 5.37

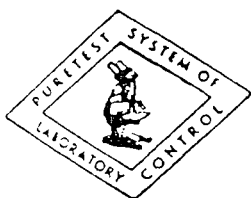
ATTACHMENT F-5

GARDEN STATE LABORATORIES, INC.

Bacteriological and Chemical Testing

399 Stuyvesant Avenue

Irvington, N.J. 07111



MATHEW KLEIN, M.S., Director

S. A. W. Waste, Inc.

25 Delmar Road

Jersey City, NJ 07305

Telephone
201-373-8007

Submitted: Of Thurs. 2/21/80.

Q Bayonne Barrel industrial waste

Sludge Analysis mg/kg Dry Weight

Cadmium	54.7
Chromium Total	130.70
Mercury	0.251
Lead	4135.
Zinc	1024.2

Leachate Analysis

Leachate mg/l

Mg Leached/kg Wet Weight

Cadmium	0.13	2.087
Chromium	0.184	2.997
Mercury	0.0062	0.009
Lead	1.16	18.50
Zinc	11.65	136.7

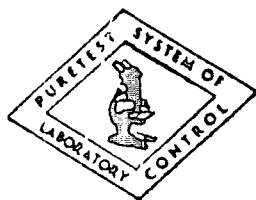
ATTACHMENT F-6 FILE INTO
B/B FOLDER

GARDEN STATE LABORATORIES, INC.

Bacteriological and Chemical Testing

399 Stuyvesant Avenue

Irvington, N.J. 07111



MATHEW KLEIN, M.S., Director

Telephone
201-373-8007

Bayonne Barrel & Drum
150 Raymond Blvd.
Newark, NJ 07105

sample submitted 5/12/80

composite effluent

all results in mg/l unless noted

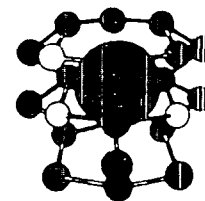
color	3000.		
Total solids	42,034.		
Total volatile solids	13,142.		
Total mineral solids	28,892		
Total suspended solids	2266.		
Volatile suspended solids	1002.		
Mineral suspended solids	1264.		
Turbidity	67.	Antimony	1.30
oil/grease	861.	Arsenic	0.020
Chlorides	10,080.	Boron	less than 2.0
Sulfate	2550.	Cadmium	0.186
BOD ₅	27,000	Chromium	0.66
COD	41,360	Copper	0.39
TOC	1820.	Iron	32.0
Sulfide	496.	Lead	2.72
Sulfite	195.	Mercury	0.0263
pH, standard units	6.49	Nickel	0.29
TKN	1264.	Selenium	less than 0.001
Ammonia-N	142.8	Silver	0.052
Nitrate-N	5.85	Tin	0.63
Orthophosphate	0.18	Zinc	4.6
		Phenol	15.66

Received 6/12/80
J.F.

BBAG000010

Stablex-Reutter Inc.

Ninth and Cooper Streets • P. O. Box 499
Trenton, New Jersey 08101
Telephone: (609) 541-6700 TWX: 834477



February 24, 1982

NJDEP
Solid Waste Division
32 Hanover Street
Trenton, NJ 08625

Attention: Mr. Wayne Howitz, Hazardous Waste Bureau

Reference: Test Report No. SR6475

This report covers the analysis of four (4) liquid samples submitted to Stablex-Reutter, Inc. (S-R) on January 29, 1982. The samples were submitted for the following analyses:

- . Organics
 - Volatile Aromatic Hydrocarbons
 - Volatile Halogenated Hydrocarbons
 - Oil and Grease
- . Inorganics
 - Metals
 - pH
- . Physical
 - Flashpoint
 - Reactivity

This test report is organized in the following manner:

- Sample Preparation
- Analysis
- Analytical Results

I. Sample Preparation

Organic Preparatory Work

A known weight (1.00 grams \pm 0.05 grams) of homogenized sample is quantitatively transferred to a centrifuge tube and shaken vigorously with 10 ml of pesticide grade methanol for five minutes. The mixture is allowed to separate, and is then centrifuged to facilitate separation of the two phases. An aliquot of the methanol layer is then analyzed by Gas Chromatography for volatile halogenated organics and volatile aromatic compounds. Any required dilutions are done with pesticide grade methanol.

BBAC00002

ATTACHMENT E-6

Stablex-Reutter Inc.

NJDEP
Solid Waste Division
Test Report No. SR6475
February 24, 1982
Page 6 of 6

Metal Analysis

Sample and Designation

Constituent	SR6475-1	SR6475-2	SR6475-3	SR6475-4	SR6475-3 Dup	SR6475-4 + Spike	
	TD063	TD064	TD065	TD066	TD065 Dup.	Amount of Spike	Recovery
Arsenic	<0.1	0.17	<0.1	<0.1	<0.1	0.1	110
Barium	14	7.0	7.0	7.0	7.0	---	---
Cadmium	<0.5	<0.5	<0.5	<0.5	<0.5	---	---
Chromium	4.5	5.5	<2	3.5	<2	0.1	130
Lead	3.0	3.0	<2	<2	<2	0.2	95
Mercury	<0.2	<0.2	<0.2	<0.2	<0.2	0.1	70
Selenium	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	85
Silver	1.5	0.5	<0.5	<0.5	<0.5	---	---
Nickel	<2	3.0	5.5	<2	8.0	---	---

The above results are reported in micrograms of constituent per gram of sample.

If you have any questions concerning the above analysis, please don't hesitate to contact me.

Respectfully submitted,

STABLEX-REUTTER, INC.

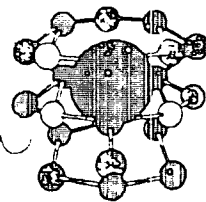


William J. Ziegler
Laboratory Manager

WJZ/bb

ATTACHMENT E-11

Stablex-Reutter Inc.



The Reutter Building, Ninth and Cooper Streets
Amden, New Jersey 08101
Telephone: 609 - 541-6700 TWX: 7108910547

Bayonne Bartel & Davis

May 25, 1982

NJDEP
Solid Waste Division
32 E. Hanover Street
Trenton, NJ 08625

Attention: Mr. Wayne Howitz, Hazardous Waste Bureau

Reference: Test Report No. SR6737

This report covers the analysis of two (2) sludge samples submitted to Stablex-Reutter, Inc. (S-R) on March 31, 1982. The samples were submitted for the following analysis:

- . Organics
 - Polychlorinated Biphenyls
 - Volatile Halogenated Organics
- . Inorganics
 - Metals (EP extraction)
 - pH
- . Physical
 - Flash Point

This test report is organized in the following manner:

- Sample Preparation
- Analysis
- Analytical Results

I. Sample Preparation

Organic Preparatory Work

A known weight (1.00 grams \pm 0.05 grams) of homogenized sample was quantitatively transferred to a centrifuge tube and shaken vigorously with 10 mls of pesticide grade methanol for five minutes. The mixture was allowed to separate, and was centrifuged to facilitate separation of the two phases. An aliquot of the methanol layer was analyzed by Gas Chromatography for volatile halogenated organics, and polychlorinated biphenyls. Any required dilutions were made with pesticide grade methanol.

BBAGCC001

ATTACHMENT E-1

Stablex-Reutter Inc.

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Inorganic Analysis

The EP extraction procedure was performed in accordance with the following publication:

- . Federal Register, May 19, 1980 edition, EPA Extraction Procedure.

The samples were prepared for pH measurement by dispersing 5 grams of sample in 25 ml of deionized water pH was then measured on this aqueous dispersion.

II. Analysis

Following preparation the samples were analyzed in accordance with the following publications.

- . Method 601 Federal Register, Vol. 44, No. 233, December 3, 1979. (Columns and GC conditions for volatile halogenated organics).
- . EPA-EMSL - The Analysis of Polychlorinated Biphenyls in Transformer Fluids and Waste Oils, June, 1980. (Columns and GC conditions for PCBs).
- . EPA - Test Methods for Evaluating Solid Waste - Physical/Chemical Methods - SW846-1980.
- . ASTM Method D-93 Standard Method of Test for Flash Point by Pensky-Martens Closed Tester.

Volatile halogenated hydrocarbons and Polychlorinated Biphenyls were analyzed using the Hall Electrolytic Conductivity Detector.

III. Analytical Results

The parameters analyzed and results are delineated in the following tables. The interlaboratory variability of the parameters analyzed in the type of sample matrix submitted has not been established by EPA, and is probably at least $\pm 20\%$. S-R is currently evaluating the variability of all tests performed for NJDEP in different types of matrices.

ATTACHMENT E-2

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Volatile Halogenated Hydrocarbon Screen

Sample and Designation

SR6737-2 + Spike

Constituent	SR6737-1 TD074	SR6737-2 TD075	SR6737-1 [#] TD074	Amount of Spike	% Recovery
	<i>ash - sludge pile</i>	<i>leachate runoff</i>			
Vinyl Chloride	<1	<1	<1	---	---
Methylene Chloride	<1	<1	<1	---	---
Chloroform	<1	<1	<1	370	89
Carbon Tetrachloride	610	<1	430	390	74
Dibromochloromethane	<1	<1	<1	---	---
Bromodichloromethane	<1	<1	<1	480	65
1,1,1 Trichloroethane	2800	<1	2100	350	69
1,1,2 Trichloroethane	<1	<1	<1	---	---
Trichloroethylene	26	<1	27	---	---
Tetrachloroethylene	<1	<1	<1	400	145
1,2 Dichloroethane	<1	<1	<1	310	52
1,1 Dichloroethylene	<1	<1	<1	---	---
1,1 Dichloroethane	<1	<1	<1	---	---
1,2 Dichloropropane	14	<1	22	290	85
2-Chloroethylvinyl Ether	<1	<1	<1	---	---
Bromoform	<1	<1	<1	---	---
1,1,2,2-Tetrachloroethane	<1	<1	<1	---	---
Chlorobenzene	<1	<1	<1	---	---

All results are in micrograms of constituent per gram of sample.

[#] Duplicate Analysis

Stablex-Reutter Inc.

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Arochlor Screen*

Sample and Designation

SR6737-2 + Spike

Constituent	SR6737-1 TD074	SR6737-2*** TD075	SR6737-2** TD075	Amount of Spike	% Recovery
Arochlor, Total as Arochlor 1254, ug/gram	<20	<20	<20	280	100

* Polychlorinated Biphenyls under the NJDEP revised protocol of 4/1/82 are limited to Arochlor compounds.

** Duplicate Analysis

*** The later peaks matched perfectly with the Arochlor standard. However, a few of the early peaks were not a perfect match to any Arochlors and under the revised NJDEP Protocol, (as relayed to S-R on 4/1/82) the sample does not contain Arochlors. The chromatograms for this sample are attached for review, and represent alternate column and alternate detector verification.

EPA EP-Extraction

Metal Analysis

Sample and Designation

SR6737-1 + Spike*

Constituent	SR6737-1 TD074	SR6737-2 TD075	SR6737-1** TD074	Amount of Spike	% Recovery	EP Toxicity Limit
Arsenic	<0.002	<0.002	<0.002	0.1	100	5.0
Barium	0.36	1.1	0.26	0.2	85	100
Cadmium	0.04	0.18	0.03	0.1	100	1.0
Chromium	<0.05	<0.05	<0.05	0.1	80	5.0
Lead	0.54	2.2	0.55	0.1	100	5.0
Mercury	<0.002	<0.002	<0.002	0.1	70	0.2
Selenium	<0.002	<0.002	<0.002	---	---	1.0
Nickel	<0.05	0.06	<0.05	1.0	104	---
Silver	<0.01	<0.01	<0.01	0.1	90	5.0

The above results are reported in milligrams of constituent per liter of EP extract.

* Spike added to EP extract

** Duplicate analysis

ATTACHMENT E-4

Stablex-Reutter Inc.

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Miscellaneous Analysis

	<u>Sample and Designation</u>	
Parameter	SR6737-1	SR6737-2
-----	TD074	TD075
-----	-----	-----
pH, units	7.80	7.10
Flash Point, °F closed cup	117	>180

If you have any questions concerning the above analysis, please don't hesitate to contact me.

Respectfully submitted,

STABLEX-REUTTER INC.

William J. Ziegler

William J. Ziegler
Laboratory Manager

WJZ/bb
Att: Chain of Custody
Lab notebook record
Chromatograms

ATTACHMENT E-5

TE

Bayonne Barrel and Drum RCRA Sampling Results (NJD009871401)

CT

Louis DiGuardia, Geologist *L. DiGuardia* 5/16/84
Source Monitoring Section

CM

William K. Sawyer, Attorney
Waste and Toxic Substances Branch

TO

Thru: John Ciancia, Chief
Source Monitoring Section

Richard D. Spear, Chief
Surveillance and Monitoring Branch

On February 17, 1984 a RCRA sampling survey was conducted at Bayonne Barrel and Drum by Joseph Cosentino, Karen Egnot, Steven Hale, Brian Kovak and myself. This survey was conducted at the request of the Waste and Toxic Substances Branch to determine if any actions were taken by Bayonne Barrel and Drum in order to comply with the complaint and compliance order issued May 20, 1982.

The facility located at 150 Raymond Boulevard in Newark, New Jersey was formerly in the business of cleaning and reconditioning dirty and damaged drums. The facility encompasses an area of approximately 20 acres. At the time of the inspection, operations had ceased and the company had filed for bankruptcy.

Drum cleaning operations formerly involved both closed head and open head drums. In closed head cleaning, chains and a caustic solution were used to wash out previous material in the drums. The spent solution drained through an oil-water separator into a 5,000 gallon underground holding/settling tank and was then pumped into a 60,000 gallon above ground holding/settling tank. The liquid was decanted to the sewer under a permit to the Passaic Valley Sewage Commission. Open head drums were placed on a conveyor belt and moved through an incinerator which burned residue out of the inside. This residue material was collected in two subsurface holding/settling tanks. Approximately 40,000 lbs of incinerator ash and sludge was generated monthly.

Samples were taken from the following areas of concern:

- 1) Under ground 5,000 gallon holding/settling tank

Sampling #65189 - aqueous sample collected from the tank.

Sampling #65190 - composite soil sample collected from the area around the tank.

ATTACHMENT D-1

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2) Oil/Water Separator

Sample #65188 - aqueous sample collected from oil separator trench.

3) Subsurface tank near incinerator

Sample #65191 - aqueous sample collected from the subsurface tank.

Sample #65192 - composite soil sample near subsurface tank.

4) Incinerator ash waste pile

Sample #65184 - composite sample taken from ash pile

Sample #65185 - " " " " " "

Sample #65186 - " " " " " "

Sample #65187 - composite soil sample taken around ash pile

Sampling equipment and containers were prepared according to EPA standard procedures prior to sampling. A total of nine (9) samples were taken, three (3) aqueous, three (3) soil, and three (3) from the ash pile.

Aqueous samples were analyzed for RCRA characteristics (ignitability and corrosivity) and non-volatile (NVOA) and purgeable (POA) organic priority pollutants. Soil and ash samples were analyzed for the characteristics of EP toxicity (metals, herbicides and pesticides) as defined in RCRA, as well as metal analysis, and priority pollutants (NVOA, POA). All analyses were performed in EPA's Edison, New Jersey laboratory. EPA standard procedures were followed for the collection of samples throughout the survey.

Sample results are given in Tables I thru VI. Results indicate that all samples contained a number of organic compounds. In the incinerator ash waste pile, EP toxicity limits for metals were exceeded for both cadmium and lead. Also, the metals scan showed high levels of heavy metal contamination in all ash and soil samples.

In addition to the above analysis, PCB's in measurable quantities were detected in sample #65187, soil by ash pile.

Attachments:

Figure I - Map of Facilities Grounds

Figure II - Sample Location Map

Tables I-VI - Analytical Results

Appendix I - Photographs

Appendix II - Receipt of Samples

Comparison of Sample Analysis to Characteristic of EP Toxicity

Parameter	Maximum Concentration for EP Toxicity mg/l	65184 mg/l	65185 mg/l	65186 mg/l	65187 mg/l	65191 mg/l	65192 mg/l
senic	5.0	.02K	.02K	.02K	.02K	.02K	.02K
rium	100.0	4.0	5.3	1.3	1.5	.16	1.7
mium	1.0	.99	1.2	.17	.08	.002K	.04
romium	5.0	.02J	.01J	.04	.008K	.02J	.08J
ad	5.0	7.6	10.0	2.4	.25	.04	.10
cury	0.2	.0002K	.0002K	.0002K	.001	.0002K	.0002K
lenium	1.0	.008K	.02J	.008K	.008K	.009J	.008K
lver	5.0	.002K	.002J	.002K	.002J	.002K	.002K
drin	.02	.000008K	.000008K	.000008K	.000008K	.000008K	.000008K
ndane	.4	.00003	.00004	.00023	.00066	.00002	.00000
thoxychlor	10.0	.00038	.00008K	.00328	.01100	.00054	.0005
4, -	10.0	.0003K	.0003K	.0073	.0080	.0003K	.0003
ivex	1.0	.00007K	.00007K	.00007K	.00007K	.00007K	.00007
xophene	0.5	.00035K	.00035K	.00035K	.00035K	.00035K	.0003

= Actual value less than value given
 = Estimated value

184, 65185, 65186 - Ash Pile
 65187 - Soil by Ash Pile
 65191 - Subsurface Tank Near Incinerator
 65192 - Soil by Subsurface Tank Near Incinerator

ATTACHMENT 2-5

Table III

Results of Metals Analysis on Samples

Parameter	65184 mg/kg	65185 mg/kg	65186 mg/kg	65187 mg/kg	65192 mg/kg
Silver	3K	3J	3K	3K	3K
Arsenic	7.5	6.6	3J	23	7.0
Beryllium	1J	1K	1K	1K	1K
Cadmium	160	120	84	59	13
Chromium	2900	1800	3300	650	1200
Copper	3300	2400	1100	1000	1100
Mercury	12	.5J	21	27	7.4
Lead	21,000	13,000	17,000	4500	2700
Nickel	250	250	79	99	850
Antimony	.8K	.8K	.8K	.8K	.8K
Selenium	.9J	5.1	.8K	4.2	2J
Sodium	.8K	.8K	.8K	.8K	.8K
Zinc	3400	3800	3500	2300	1900

K = Actual value less than value given

J = Estimated value

65184, 65185, 65186 - Ash Pile

65187 - Soil by Ash Pile

65192 - Soil by Subsurface Tank Near Incinerator



Dan Raviv Associates, Inc.

Consultants in ground water hydrology, water quality and landfill hydrology

July 17, 1986

Scheider & Wiener, P.A.
Attorneys at Law
1180 Raymond Boulevard
Suite 400
Newark, New Jersey 07102

Attention: Avram Eule, Esq.

Re: Transmittal of Soils and Ground Water
Characterization Report
Bayonne Barrel and Drum Co. - Newark, New Jersey
DRAI Job No. 84C182

Gentlemen:

Dan Raviv Associates, Inc. (DRAI) has completed a site investigation at Bayonne Barrel and Drum Company (BB&D). Enclosed you will find our Report entitled "Soils and Ground Water Characterization, Bayonne Barrel and Drum Company".

This investigation has been performed as outlined in the DRAI Work Plan for the Investigation of Soils, Residues, and Water Quality, in compliance with the Consent Agreement Between Bayonne Barrel and Drum Company and the United States Environmental Protection Agency (USEPA) (Docket No. II RCRA-82-0015), dated October 1, 1984.

Our report includes a summary of: (1) activities performed during field investigations; (2) site description and geologic conditions; (3) results of analyses performed on samples collected; and (4) areas of environmental concern (as they have been defined, based on the results of our investigations).

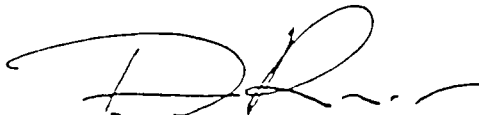
Avram Eule, Esq.
July 17, 1986
Page 2

In accordance with our agreement, copies of this report should be forwarded to Mr. Frank Langella and his attorneys, as well as Mr. Stanley Siegel, Acting Chief, Solid Waste Branch, USEPA, Region II.

If you have any questions or need additional information, please call.

Very truly yours,

DAN RAVIV ASSOCIATES, INC.



Dan D. Raviv, Ph.D.
President

DDR/sm
Enc. (4 copies sent)

Dan Raviv Associates, Inc.

Soils and Ground Water Characterization
Bayonne Barrel and Drum Company
Newark, New Jersey
Job No. 84C182

PREPARED FOR

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Newark, New Jersey

ON BEHALF OF

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PREPARED BY

Dan Raviv Associates, Inc.
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BBAG00032

April 18, 1986
Updated: July 1986

Dan Raviv Associates, Inc.

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Soil & Groundwater Characterization

Don Reviv Assoc July 1986

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B	Well Logs
C	Chain of Custody Forms
D	Laboratory Data Sheets

Table V
Summary of Metals, Phenol, Cyanide & Pesticides Concentrations
in Soils January 18, 1985 and October 25-31, 1985
Bayonne Barrel & Drum Company

Sample No.	BBD 10	BBD 4	BBD 0	BBD 11	BBD 14	BBD 15	BBD 16	BBD 17
Sample Depth (ft):	(notes)	0-1	0-1	0-1	0-1	0-1	5-8 8-10	0-1
		ash pile	drum storage					incinerator
METALS (ppm)								
Antimony		13			8.4		4.0	6.0
Arsenic	0.002	17	390	51	8.4	55	2.9	56
Barium	ND 1.0		22	10		10		
Beryllium		0.64			0.28		0.32	0.5
Cadmium	0.21	1300	34	4.72	0.52	5.08	0.2	6.56
Chromium	ND 0.02	3400	1900	43.2	27	52.0	7.0	2300
Copper		15500			15.6		4.64	128
Lead	2.6	8400	8400	380	92	6400	15	370
Mercury	0.0004	2.2	13.6	1.3	1.6	4.1	0.62	1.6 (2.3)
Nickel		62.4			25		5.28	56.8
Silver	ND 0.02	0.92	3.1	0.48	0.3	0.84	0.2	1.7
Selenium	0.001	0.03	0.046	0.004	0.019	0.042	ND 0.004	0.023
Thallium		ND 0.4			ND 0.4		ND 0.4	ND 0.4
Zinc		4520			71.2		15.4	3040
Phenol (ppm)								
		15			ND 0.5		2.8	20
Cyanide (ppm)								
		2			ND 0.1		ND 0.1	0.5
PESTICIDES (ppb)								
Endrine	ND 1.0							
Lindane	ND 1.0							
Methoxychlor	ND 1.0							
Toxaphene	ND 1.0							
2,4-D	ND 1.0							
2,4,5-TP Silver	ND 1.0							

Notes: Sample BBD 10, collected January 18, 1985, from furnace residue pile, is a composite sample analysed for EP Toxicity.
ND = Not detected at or above minimum detection limit indicated.
If no entry, analysis was not requested.

31

Results of Preliminary Investigations and Sampling in Proposed New Jersey Turnpike Right-of-Way at the Bayonne Barrel and Drum Property

Newark, New Jersey

Submitted to:

New Jersey Turnpike Authority

P.O. Box 1121

New Brunswick, New Jersey

Submitted by:

Louis Berger & Associates, Inc.

100 Halsted Street

East Orange, New Jersey

December 1986

BBAG00004

ATTACHMENT C-1

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TABLE 5 (CONTINUED)
SUMMARY OF AREA A CHEMICAL ANALYSIS RESULTS

Sample #	M1186	M1189	M1196	M1213	M1214	M1215
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/l
Date of Submission	25-Apr	25-Apr	05-May	26-Apr	26-Apr	27-May
Depth	0-18"	0-18"	0-2'			
Composite/Discrete	D	D	D	C	C	D
Soil (S)/Water (W)/Sediment (X)	S	S	S	X	X	W

BASE/NEUTRAL/ACID EXTRACTIBLES, ADDITIONAL PEAKS (SEMI-QUANTITATIVE) CONTINUED

Methyl-ethyl phenols	ND	ND	ND	ND	ND	ND
Methyl-methyl ethyl phenols	ND	ND	ND	ND	ND	ND
Methyl-methyl-ethyl benzenes	2,290	ND	2,27	ND	ND	ND
Methyl-naphthalene	ND	ND	ND	ND	ND	ND
Methyl-propyl benzenes	ND	ND	ND	ND	ND	ND
Naphthalene, decahydro, trans	ND	ND	ND	ND	ND	ND
n-propyl benzamide	ND	ND	ND	8,490	ND	ND
Phosphoric acid, triphenyl ester	ND	ND	ND	ND	ND	ND
Propyl benzenes	ND	ND	ND	ND	ND	ND
Tetrachlorobiphenyls	ND	ND	ND	ND	ND	ND
Tetradecanoic acid	ND	ND	ND	1,229	ND	ND
Tetramethyl benzenes	ND	ND	ND	ND	ND	ND
Tetramethyl butyl phenols	5,090	2,480	335	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND
Trimethyl benzenes	ND	ND	ND	ND	ND	ND
Trimethyl naphthalenes	4,950	ND	ND	ND	ND	ND
Trimethyl phenols	ND	ND	ND	ND	ND	ND
Xylenes	5,580	ND	386	ND	ND	ND

PCB

PRIORITY POLLUTANTS

roclor 1242	4,100 ^{J1}	ND ^{J1}	ND ^{J1}	ND	ND	ND
roclor 1254	25,000 ^{J1}	2,200 ^{J1}	3,600 ^{J1}	ND	ND	ND
Totals	29,100 ^{J1}	2,200 ^{J1}	3,600 ^{J1}	0	0	0

METALS
UNITS

ug/kg ug/kg ug/kg ug/kg ug/kg ug/l

PRIORITY POLLUTANTS

Antimony	13.60	0.90	1.10	3.50	4.10	3.10
Arsenic	16.20	9.20	3.60	5.60	27.00	ND
Beryllium	2.30	0.09	ND	0.48	0.32	ND
Cadmium	11	24	ND	100	16	2.50
Chromium	99	170	ND	210	120	12.00
Copper	550	233	1.10	223	530	7.80
Lead	980	790	330	970	720	ND
Mercury	1.20	2.50	0.44	53	1.00	0.65
Nickel	84	54	ND	69	76	15
Selenium	ND	ND	0.41	ND	ND	ND

J1 = Estimated Concentration. Samples were reanalyzed past holding time limits as specified in 40CFR Part 136

TABLE 6 (CONTINUED)
SUMMARY OF AREA 1 CHEMICAL ANALYSIS RESULTS

Sample #	M1190	M1191	M1192	M1193	M1194	M1197	M1200	M1247
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Date of Submission	25-Apr	25-Apr	25-Apr	25-Apr	25-Apr	25-Apr	25-Apr	25-Apr
Depth	0-1R	1E-3E	0-1R	1E-3E	0-1R	1E-3E	0-1R	0-1R
Composite/Discrete	D	D	D	D	D	D	D	D
Soil (S)/Water (W)/Sediment (X)	S	S	S	S	S	S	S	S

BASE/NEUTRAL/ACID EXTRACTABLES, ADDITIONAL PEAKS (SEM)-QUANTITATIVE CONTINUED								
Methyl-ethyl phenols	ND	ND	ND	ND	ND	ND	ND	ND
Methyl-methyl-ethyl phenols	ND	ND	ND	ND	ND	ND	ND	ND
Methyl-methyl-ethyl benzenes	ND	48,400	ND	3,180	ND	ND	ND	ND
Methyl-naphthalene	ND	26,300	ND	ND	ND	ND	ND	ND
Methyl-propyl benzenes	81,900	26,300	ND	ND	ND	ND	4,925	ND
Naphthalene, decahydro, trans	ND	ND	ND	ND	ND	ND	ND	ND
n-propyl benzamide	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric acid, triphenyl ester	ND	ND	ND	ND	ND	ND	ND	ND
Propyl benzenes	27,600	17,700	ND	ND	ND	ND	ND	ND
Tetrachlorobiphenyls	ND	ND	ND	ND	ND	ND	ND	ND
Tetradecanoic acid	ND	ND	ND	ND	ND	ND	ND	ND
Tetramethyl benzenes	112,200	ND	ND	ND	1,182	ND	5,942	25,960
Tetramethyl butyl phenols	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND
Triethyl benzenes	ND	82,100	ND	ND	994	ND	ND	ND
Triethyl naphthalenes	ND	ND	ND	ND	ND	ND	ND	ND
Triethyl phenols	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	475,000	238,700	3,600	ND	1,868	759	ND	232,560

TCB								
PRIORITY POLLUTANTS								
Aroclor 1242	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	27,000	73,000	37,000	1,400	1,000	140	2,800	1,100
Totals	27,000	73,000	37,000	1,400	1,000	140	2,800	1,100

METALS UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
PRIORITY POLLUTANTS								
Antimony	12.00	16.00	1.70	3.20	1.00	1.20	6.70	12.00
Arsenic	36.00	73.00	24.00	26.00	5.60	1.50	18.00	62.00
Beryllium	1.20	0.16	0.52	0.99	0.38	0.34	0.25	9.70
Cadmium	63	71	6	10	7.90	0.35	27	29
Chromium	790	590	67	96	130	10.00	305	510
Copper	1,380	870	380	430	140	34	1,150	2,050
Lead	8,200	6,520	1,440	ND	1,010	1,060	2,500	5,600
Mercury	9.10	1.90	1.60	1.80	1.90	0.27	1.20	3.60
Nickel	160	110	37	5.40	24.00	6.50	110	218
Selenium	ND	ND	ND	ND	ND	ND	ND	ND

NI = Estimated Concentration. Samples were reextracted post holding time limits or specified in 40 CFR part 136

TABLE 7 (CONTINUED)
SUMMARY OF AREA C CHEMICAL ANALYSIS RESULTS

Sample #	M1194	M1195	M1203	M1205	M1206	M1207	M1208	M1217
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/l
Date of Submission	28-Apr	28-Apr	06-May	06-May	06-May	26-Apr	26-Apr	27-May
Depth	0-18"	18-36"	3-5'	13-15'	17.5-19'	0-18"	18-36"	
Composite/Discrete	D	D	D	D	D	C	C	D
Soil (S)/Water (W)/Sediment (X)	S	S	S	S	S	S	S	W

BASE/NEUTRAL/ACID EXTRACTIBLES, ADDITIONAL PEAKS (SEM)-QUANTITATIVE) CONTINUED

Diethyl-ethyl phenols	ND	ND	2,080	ND	918	ND	ND	ND
Diethyl-methyl-ethyl phenols	ND	ND	ND	3,920	ND	ND	ND	ND
Diethyl-methyl-ethyl benzenes	ND	ND	ND	ND	886	ND	1,750	ND
Diethyl-naphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl-propyl benzenes	ND	ND	ND	ND	ND	ND	4,885	ND
Naphthalene, decahydro, trans	ND	ND	ND	ND	ND	ND	ND	ND
N-propyl benzamide	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric acid, triphenyl ester	ND	ND	ND	2,890	ND	ND	ND	ND
Propyl benzenes	ND	ND	ND	ND	ND	ND	4,700	ND
Tetrachlorobiphenyls	ND	ND	ND	ND	ND	922	ND	ND
Tetradecanoic acid	ND	ND	ND	ND	ND	ND	ND	ND
Tetramethyl benzenes	ND	ND	57,700	ND	ND	ND	4,350	ND
Tetramethyl butyl phenols	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	1,530	ND	ND	ND	ND	ND	ND
Trimethyl benzenes	ND	ND	ND	ND	ND	491	20,410	ND
Trimethyl naphthalenes	ND	ND	ND	ND	ND	ND	ND	ND
Trimethyl phenols	ND	ND	2,590	2,900	2,490	ND	ND	ND
Xylenes	ND	ND	98,900	9,370	1,050	740	26,000	ND

PCB

PRIORITY POLLUTANTS

Aroclor 1242	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	500 J1	79 J1	ND	ND	1,100 J1	5,300 J1	50,000 J1	ND
Total	500 J1	79 J1	0	0	1,100 J1	5,300 J1	50,000 J1	0

METALS
IN ITS

PRIORITY POLLUTANTS

	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/l
Antimony	0.90	0.20	19.00	ND	ND	5.20	6.70	2.60
Arsenic	4.50	3.70	11.00	5.90	1.30	14.00	7.70	2.00
Beryllium	0.16	0.14	ND	ND	ND	0.32	0.49	ND
Cadmium	0.49	ND	0.28	ND	ND	9.90	12	ND
Chromium	19	9.90	3.30	1.10	ND	130	280	2.30
Copper	29	23	4.80	1.60	ND	250	350	6.30
Lead	43	43	2.760	350	90	1,060	1,980	ND
Mercury	0.39	0.10	1.90	1.90	0.05	2.00	1.30	ND
Nickel	7.40	5.20	ND	0.30	ND	25	57	22
Selenium	ND	ND	3.90	0.32	ND	0.60	1.00	ND

J1 = Estimated Concentration. Samples were reextracted not holding two limits as specified in ASTM norm 100

SUMMARY REPORT
OF THE
TEST PIT AND MONITORING WELL INVESTIGATION
AT THE
NEWARK DRIVE-IN SITE

Prepared for

NATIONAL AMUSEMENTS, INC.
200 Elm Street
Dedham, Massachusetts 02116

Prepared by

WEHRAN ENGINEERING CORPORATION
666 East Main Street
Middletown, New York 10940

WE Project No. 07445 ES

October 1988

BBA000045

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Table 2
NATIONAL AMUSEMENTS, INC.
ANALYTICAL RESULTS OF GROUNDWATER TESTING

Metals

Parameter (µg/l unless noted)	NJPDES Permit Maximum Contaminant Limitation	Monitoring Wells				
		MW-01	MW-02	MW-03	MW-04	MW-05
Arsenic	50	3,220	<10	<10	<10	<10
Barium	1,000	<200	237	404	<200	294
Cadmium	10	<10	<10	<10	<10	<10
Chromium-Hexavalent	50	<10	<10	<10	<10	<10
Copper	1000	<25	<25	<25	<25	<25
Iron	300	44,700	1,480	30,200	20,900	19,400
Lead	50	<5.0	<5.0	<5.0	<5.0	<5.0
Manganese	50	3,920	278	2,430	5,050	1,360
Mercury	2	<0.2	<0.2	0.2	<0.2	0.2
Selenium	10	<5.0	<5.0	<5.0	<5.0	<5.0
Silver	50	<10	<10	<10	<10	<10
Sodium	50,000	33,400	68,700	118,000	32,300	182,000
Zinc	5,000	115	83	<20	32	34

Notes:

- = Not applicable
- * = By membrane filtration, not to exceed four per 100 ml in more than one sample when less than 20 are examined per month.
- ** = The field blank had a concentration of 10.4 mg/l.
- BOLD** = Concentration exceeds the NJPDES Permit Maximum Contaminant Limitation.

Table 8
NATIONAL AMUSEMENTS, INC.
METALS, CYANIDES, AND PETROLEUM HYDROCARBONS IN TEST PIT SAMPLES

Parameter (mg/kg)	Test Pit Samples					
	TP-01-DIS	TP-02-DIS	TP-02	TP-03	TP-04	TP-05-DIS
Aluminum	5,610	7,870	9,020	5,430	5,840	6,190
Antimony	< 12	13.8	< 12	< 12	< 12	46.7
Arsenic	14.2	9.1	7.8	10.4	198	19.3
Barium	237	381	245	196	326	1,450
Beryllium	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cadmium	< 2.0	2.74	2.35	< 2.0	4.2	26.6
Calcium	5,400	5,210	5,760	3,720	6,000	13,200
Chromium	19.5	53.3	30.0	20.5	17.8	1,420
Cobalt	< 10	< 10	< 10	< 10	< 10	< 10
Copper	106	127	99	207	91.7	788
Iron	14,200	15,600	16,600	25,600	18,400	38,600
Lead	438	556	274	875	745	15,400
Magnesium	1,920	1,570	2,370	1,360	2,100	2,270
Manganese	371	230	273	300	332	322
Mercury	0.95	2.40	1.67	2.59	0.83	2.28
Nickel	14.0	27.7	25.4	24.3	16.4	97.9
Potassium	709	718	739	572	622	706
Selenium	< 1.0	1.0	1.2	< 1.0	< 1.0	8.7
Silver	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	2.6
Sodium	233	516	391	434	317	467
Thallium	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Vanadium	22.1	17.3	18.7	18.0	21.5	31.9
Zinc	395	462	410	564	467	1,940
Total Cyanides	0.69	14.2	11.1	1.78	0.89	22.6
Petroleum Hydrocarbons	480	33.4	204	190	608	673

Table 8
NATIONAL AMUSEMENTS, INC.
METALS, CYANIDES, AND PETROLEUM HYDROCARBONS IN TEST PIT SAMPLES

Parameter (mg/kg)	Test Pit Samples					
	TP-07	TP-08	TP-09	TP-12	TP-13	TP-14-DIS
Aluminum	5,710	4,980	5,940	4,980	7,790	2,000
Antimony	< 12	53.3	15.6	20.6	13.5	< 12
Arsenic	14.0	61.5	55.0	125	11.0	6.8
Barium	1,150	1,020	1,160	801	359	136
Beryllium	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cadmium	3.84	8.65	7.96	10.7	2.49	< 2.0
Calcium	9,910	9,030	9,150	7,610	4,400	5,230
Chromium	63.5	131	84.1	53.8	50.8	14.5
Cobalt	< 10	< 10	11.9	< 10	< 10	< 10
Copper	304	396	658	373	261	51.2
Iron	14,700	28,900	48,600	89,600	20,100	1,030
Lead	1,650	1,550	2,260	1,340	694	277
Magnesium	1,960	1,180	1,720	1,840	1,970	1,050
Manganese	195	246	380	532	231	82.1
Mercury	28.3	2.11	4.02	3.10	7.10	0.52
Nickel	37.7	62.9	67.1	70.2	35.8	62.0
Potassium	650	443	591	515	668	429
Selenium	1.6	4.1	< 1.0	3.9	6.7	< 1.0
Silver	23.3	3.4	< 2.0	< 2.0	< 2.0	< 2.0
Sodium	377	383	381	362	376	771
Thallium	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Vanadium	29.2	34.3	21.1	29.0	27.5	29.6
Zinc	733	1,730	2,040	2,180	579	114
Total Cyanides	5.72	9.45	7.84	9.20	17.9	11.4
Petroleum Hydrocarbons	1,010	1,380	1,030	2,970	339	not analyzed



Preliminary Assessment

Bayonne Barrel and Drum Company
154 Raymond Blvd.
Newark, Essex County, New Jersey

EPA ID # NJ D009871401

Hours worked: 54 hrs.

BBAC000047



POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE: 02 SITE NUMBER
NJ 10009871401

II. SITE NAME AND LOCATION

01 SITE NAME (Name, address, or description of site) Bayonne Barrel and Drum Company		02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER 154 Raymond Blvd.			
03 CITY Newark	04 STATE NJ	05 ZIP CODE 07105	06 COUNTY Essex	07 COUNTY CODE	08 CENSUS DIST.
09 COORDINATES: LATITUDE 40 43 56		LONGITUDE 74 07 30		Block 5002 Lots 3 and 14, 15 acres	

10 DIRECTIONS TO SITE (Starting from main highway, public road)

Route 1 North to Raymond Blvd., exit in Newark; facility is on right-hand side, off exit ramp.

III. RESPONSIBLE PARTIES

01 OWNER (Name) Bayonne Barrel and Drum Company		02 STREET (Name, address, or location) 154 Raymond Blvd.			
03 CITY Newark	04 STATE NJ	05 ZIP CODE 07105	06 TELEPHONE NUMBER ()		
07 OPERATOR (If different from owner) Same as above		08 STREET (Name, address, or location)			
09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER ()		

13 TYPE OF OWNERSHIP (Check one)

☒ A PRIVATE ☐ B FEDERAL (Agency Name) ☐ C STATE ☐ D COUNTY ☐ E MUNICIPAL
☐ F OTHER (Agency Name) ☐ G UNKNOWN

14 WHEN OPERATOR NOTIFICATION ON FILE (Check one)

☐ A RCRA 3001 DATE RECEIVED MONTH DAY YEAR ☒ B UNCONTROLLED WASTE SITE (RCRA 103) DATE RECEIVED MONTH DAY YEAR ☐ C NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION <input checked="" type="checkbox"/> YES DATE 06 02 88 <input type="checkbox"/> NO	02 (Check all that apply) <input checked="" type="checkbox"/> A EPA <input type="checkbox"/> B EPA CONTRACTOR <input type="checkbox"/> C STATE <input type="checkbox"/> D OTHER CONTRACTOR <input type="checkbox"/> E LOCAL HEALTH OFFICIAL <input type="checkbox"/> F OTHER (Specify)
CONTRACTOR NAME(S):	

03 SITE STATUS (Check one)

☐ A ACTIVE ☒ B INACTIVE ☐ C UNKNOWN

04 YEARS OF OPERATION

1945 1982 ☐ UNKNOWN
BEGINNING YEAR ENDING YEAR

05 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN OR ALLEGED

Volatile organic compounds including benzene, chlorobenzene, ethylbenzene, toluene, xylene, styrene; petroleum hydrocarbons; PCB's; metals including cadmium, chromium and lead.

06 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

Soil and groundwater is contaminated with volatile organics, petroleum, hydrocarbons and PCB's. Waste ash piles and drums containing hazardous wastes are present at the site; an estimated 30,000 drums are stacked in the rear of the property, some may

V. PRIORITY ASSESSMENT

contain hazardous residues.

07 PRIORITY FOR INSPECTION (Check one) (Priority is based on a check of: Compare Part 2 - Make Preliminary and Part 3 - Classification of Hazardous Conditions and Releases)

☒ A HIGH (Immediate threat to health or environment) ☐ B MEDIUM (Potential threat to health or environment) ☐ C LOW (Potential threat to health or environment) ☐ D NONE (No further action required; continue to monitor and report)

VI. INFORMATION AVAILABLE FROM

01 CONTACT Michael Ferriola	02 OF (Agency/Company Name) EPA Surveillance and Monitoring Branch	03 TELEPHONE NUMBER 201, 321-6776
04 PERSON RESPONSIBLE FOR ASSESSMENT d Gaven	05 AGENCY NJDEP	06 ORGANIZATION DHWM/BPA
	07 TELEPHONE NUMBER 609, 292-4320	08 DATE 10 24 88 MONTH DAY YEAR



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE NJ 02 SITE NUMBER D009871401

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (CHECK ALL THAT APPLY)

☒ A SOLID
☐ B POWDER FINES
☐ C SLUDGE
☐ D OTHER (Specify)

☐ E SLURRY
☐ F LIQUID
☐ G GAS

02 WASTE QUANTITY AT SITE

(Measure in POUNDS, TONS, CUBIC YARDS, NO. OF DRUMS)

TONS

CUBIC YARDS

NO. OF DRUMS

03 WASTE CHARACTERISTICS (CHECK ALL THAT APPLY)

☐ A TOXIC
☐ B CORROSIVE
☐ C RADIOACTIVE
☐ D PERSISTENT

☐ E SOLUBLE
☐ F INFECTIOUS
☐ G FLAMMABLE
☐ H IGNITABLE

☐ I HIGHLY VOLATILE
☐ J EXPLOSIVE
☐ K REACTIVE
☐ L INCOMPATIBLE
☐ M NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSO	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently used CAS numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
MES	arsenic	7440-38-2		390	ppm
MES	cadmium	7440-43-9	Soil Samples	1,300	ppm
	chromium	7440-47-3		3,400	ppm
MES	copper	7440-50-8	* Concentrations	15,000	ppm
MES	lead	7439-92-1	shown are the highest	8,400	ppm
MES	mercury	7439-97-6	levels detected in	13.6	ppm
MES	zinc	7440-66-6	soil samples.	5,040	ppm
SOL	ethybenzene	100-41-4	waste ash pile	5,200	ppb
SOL	trichloroethylene	79-01-6	samples	490	ppb
SOL	tetrachloroethylene	127-18-4		1,300	ppb
SOL	toluene	108-88-3		12,000	ppb
SOL	xylene	1330-20-7		4,600	ppb
SOL	styrene	100-42-5		2,500	ppb
OCC	arochlor 1248	12672-29-6		293,970	ppb
OCC	arochlor 1254	11097-69-1		115,400	ppb

V. FEEDSTOCKS (See Appendix for CAS numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references e.g. State Title, Edition, Number, Report)

Investigation and Sampling Episode (Ref. A)
Soil and Groundwater Characterization Report-Dan Raviv Associates (Ref. B)

SITE INSPECTION REVIEW

BAYONNE BARREL AND DRUM CO.
154 RAYMOND BLVD.
NEWARK, ESSEX COUNTY, N.J.
EPA ID # NJD009871401

GENERAL INFORMATION AND SITE HISTORY

Bayonne Barrel and Drum Co. is an inactive facility located in an industrial area of Newark, bordered by Route 1 and 9 to the west, the New Jersey Turnpike to the east, and an empty lot previously occupied by the Newark drive-in movie theater to the south. The site covers approximately 15 acres and consists of three main buildings and a large yard area. Most of the site is in Block 5002 Lot 3 (9.3 acres) and is owned by Bayonne Barrel and Drum Co. Block 5002 Lot 14 (5.5 acres) is owned by Frank Langella, principal owner of BBD, and is used as part of the facility for drum storage.

Bayonne Barrel and Drum Co. operated a drum reconditioning facility at the site from the early 1940's until about 1982 when the company filed for bankruptcy. According to NJ Department of State records, Bayonne Barrel and Drum Co. incorporated in 1937 under the name of Export Barrel Co. The name was changed to Bayonne Barrel and Drum Co. in 1942. Property deed records for Essex County indicate a history of site ownership as follows:

Bayonne Barrel and Drum Co.	1945 - present
Colville Bros. Inc.	1933 - 1945
Barbara and Henry Smith	1931 - 1933
B & F Co. Inc.	Prior to 1931

N.J. Department of State records indicate that B & F Co. incorporated in 1931 and dissolved in 1935; Colville Bros. incorporated in 1933 and dissolved in 1945.

Sanborn fire insurance maps show a drum reconditioning facility at the site as early as 1931, owned by B & F Co. Inc. The buildings present at the site were labeled as "tenant occupied" and included crate and drum storage, and drum cleaning areas. A review of aerial photography was conducted in 1986 by Louis Berger and Associates, a consultant for the N.J. Turnpike Authority which is proposing to construct a right-of-way over a portion of the BBD property. The following areas of potential environmental concern were noted:

- 1947 - landfill activity in the southern portion of the site.
 - lagoon near eastern site boundary.
 - drainage channels connecting lagoon to Passaic River.
 - large open storage area containing several thousand drums.
- 1959 - N.J. Turnpike construction near eastern site boundary.
 - liquid filled trench near old lagoon location.
 - small waste disposal area in northeast corner of site.
- 1985 - dark ground staining along eastern site boundary.
 - large mound of dark material (ash) near western edge of site.
 - lagoon and waste disposal areas no longer evident.

BBAC000048

Currently, the site contains several buildings, an incinerator, above-ground and underground storage tanks, an ash/sludge pile and an empty drum storage area (30,000 drums estimated). Since BBD filed for bankruptcy a portion of the site has been leased and used to repair and maintain trailers and cargo containers. A one-acre parcel near the northern boundary is reportedly leased to Nationwide Tire and contains a pile of used automobile tires.

SITE OPERATIONS OF CONCERN

Operations at the BBD facility involved both closed head and open head drums. The closed head system employed chains and caustic solution to remove residues in the drums. Spent solution from the process drained through an oil/water separator trench into a 5,000-gallon underground tank, and then was pumped into a 60,000-gallon above-ground holding/settling tank prior to being discharged to the sewer under a permit with the Passaic Valley Sewage Commission. Open head drums were placed on a conveyor and processed through the incinerator with residue from the process collected in two subsurface holding/settling tanks, and then placed into a dumpster/trailer prior to being manifested off-site.

Past inspections by NJDEP representatives during 1982 and 1984 reported the following items:

- 40,000 pounds per month of incinerator ash and sludge generated at the facility, most of which was being sent to S & W Waste in Kearny, N.J.; a lesser amount was disposed of at GROWS Landfill in Morrisville, Pa.
- wastewater overflow from the 5,000-gallon tank was observed entering a storm sewer as a result of a frozen pump and broken lines to the tank; the storm sewer reportedly flows to a small creek leading to the Passaic River.
- oil staining on ground surface near the above-ground tank.
- ash/sludge material on ground surface around incinerator.
- ash/sludge pile (220' x 50' x 4') on ground in rear of property, uncovered with no containment or runoff control.
- approximately 30,000 drums stacked on ground in rear of property; a random survey indicated about half of the drums contained some amount of material.

The ash pile and rows of drums (30,000 estimated) still remain in the rear of the property. The plastic cover over the ash pile is in poor condition, leaving the pile partially uncovered. In addition, a RCRA enforcement inspection conducted by EPA during June 1988 noted a large ash pile and 100-150 drums containing ash and aqueous materials in a building near the incinerator. There is also an ash pile in the courtyard between the incinerator and furnace room building.

A NJPDES-DGW permit (NJ 0064068) was issued to Bayonne Barrel and Drum Co. and several adjacent property owners in order to monitor groundwater in the vicinity of an old landfill area which was reportedly active prior to 1947, known as the 15E sanitary landfill. The landfill covers approximately 45

acres and received construction and demolition debris. It is located in the area between Foundry Street and Raymond Blvd. and encompassed the southern portion of the BBD site and the former drive-in movie theater to the south. The permit was issued 2/15/88 and includes 13 groundwater monitoring wells.

GROUNDWATER ROUTE

A soil and groundwater characterization report for the BBD site was submitted by Dan Raviv Associates in July 1986. The report contains soil and groundwater sampling data and information on site geology and groundwater conditions. Soil and well boring data indicate that the site is underlain by the following materials:

- black coal-cinder fill material: 0-10 feet
- medium to coarse grained sand: 10-40 feet
- dark red-brown coarse silt: 40-50 feet
- dark red shale (Brunswick Formation): below 50 feet

Field investigations by Dan Raviv Associates included the installation of four monitoring wells (20-50 feet deep) and one well point (10 feet deep). The monitoring wells included two background locations, one near the ash pile, and one near the oil storage tanks the northeast portion of the site. Groundwater samples were analyzed for volatile organics, petroleum hydrocarbons, and PCB's. The monitoring well near the above-ground tank (downgradient location) was also analyzed for priority pollutants. Depth to groundwater is 3-4 feet and the direction of flow is toward the east.

Sampling data indicate that groundwater beneath the site is contaminated with volatile organics, petroleum hydrocarbons, and PCB's at concentrations significantly above background. The monitoring well near the ash pile showed low level contamination with benzene (28 ppb), naphthalene (14 ppb), and di-n-butylphthalate (28 ppb). Groundwater in the northeast portion of the site near the oil storage tanks was found to be contaminated with PCB's (53 ppb), petroleum hydrocarbons (2,000 ppm), toluene (150 ppb), chlorobenzene (67 ppb), ethylbenzene (1,060 ppb), dichlorobenzenes (76 ppb), and various non-priority pollutant organics including cyclohexane (60 ppb), cycloheptane (100 ppb), isopropylbenzene (90 ppb), n-propylbenzene (150 ppb), ethyl toluene isomers (550 ppb), trimethylbenzene isomers (1400 ppb), and xylene isomers (2000 ppb).

A soil and groundwater study was also completed by Louis Berger Associates in 1986 in order to characterize contamination in the proposed NJ Turnpike right-of-way adjacent to the eastern site boundary. Two additional monitoring wells were installed in this area and the results showed contamination with volatile organics (up to 98 ppb), polynuclear aromatic hydrocarbons (34 ppb), phenol (877 ppb), and 2,4-dimethylphenol (860 ppb).

NJDEP water supply overlay and water allocation maps show no major public supply wells within a 3 mile radius of the site. Groundwater in the area is not used for drinking, however there are a number of industrial supply wells on the order of 200-700 feet deep which draw from the Brunswick Formation. Downward migration of contaminants at the BBD site could have an adverse impact on water quality of the Brunswick Formation.

SURFACE WATER ROUTE

The nearest downslope surface water is the Passaic River about 2000 feet to

the east, which empties into the Newark Bay roughly one mile south of the site. Storm sewers at the site reportedly lead to Harrison's Creek and the Passaic River. A NJDEP inspection in 1982 reported wastewater flowing into a storm sewer as a result of equipment malfunctions at the facility. Sample of the wastewater discharge to the storm sewer showed contamination with benzene, toluene, xylene, ethylbenzene, methylene chloride, and 1,1,1-trichloroethane. The Passaic River is used for industrial purposes and occasional recreational boating.

AIR ROUTE

There are no records of air sampling conducted at the site. The facility had 12 air pollution control permits during its operation (plant ID #05103) that included drum cleaning units, paint spray booths and ovens, drum incinerator, baghouses, and a deisel fuel and gasoline tank.

During 1978 the facility was cited for opacity violations which resulted from drums not being emptied properly prior to incineration. Hydrogen sulfide type odors and other strong odors were noted by Louis Berger Associates during work along the eastern portion of the site, and by road workers during construction along Route 1 and 9. The potential for air contamination exists due to the documented volatile organic contamination at the site, however there are other sources of air pollution in the area from adjacent highways and the Newark Airport located about three miles to the south.

SOIL

Field work completed by Dan Raviv Associates included soil samples from 19 soil borings (up to 15 feet deep) and five well borings (up to 42 feet deep). A total of 71 soil samples were analyzed at depths ranging from 0-22 feet for a variety of parameters including total petroleum hydrocarbons, volatile organics, PCB's, and priority pollutant scan. One sample was analyzed for dioxin. The highest levels of soil contamination detected at the site are listed as follows:

total priority volatile organics -	22,553 ppb
total non-priority volatile organics -	66,035 ppb
total petroleum hydrocarbons -	173,000 ppm
PCB's	320 ppm
arsenic	390 ppm
cadmium	1300 ppm
chromium	3400 ppm
copper	15,500 ppm
lead	8,400 ppm
mercury	13.0 ppm
zinc	5040 ppm

Petroleum hydrocarbon concentrations above 100 ppm were detected throughout the site at depths up to ten feet. Volatile organic and PCB contamination was detected in the oil storage tanks area, drum storage area, and ash pile area. The highest metal contamination was found near the ash pile and drum storage areas in the rear of the property.

DIRECT CONTACT

No reported incidents of direct contact were noted in Department files. The potential for direct contact is low since the facility is inactive and surrounded by a fence. The nearest residential area is about 1/2 mile to

to the west. There is a potential for exposure by highway construction workers next to the site and the few security and maintenance staff at the facility. Past BBD employees may have been exposed to hazardous materials due to sloppy housekeeping and waste handling practices and contamination which has been documented throughout the site.

FIRE AND EXPLOSION

NJDEP Enforcement files contain two reports of fires at the site, however these did not directly involve hazardous substances or wastes present at the facility. A brush fire in 1985 encompassed the portion of the site containing the automobile tire pile, but did not spread to the rows of drums in the rear of the property. A smaller brush fire also occurred at the site in 1986. Most of the drums stacked in the rear of the property (30,000 estimated) are reported to be empty, however there may be volatile or flammable residues present in some of the drums. EPA inspectors noted 100-150 drums containing ash residues and aqueous materials in a building near the incinerator area during a recent inspection and sampling episode. Samples collected from an ash pile inside the building and an aqueous drum sample showed volatile organic contamination, representing a potential fire or explosion hazard.

ADDITIONAL CONSIDERATIONS

The potential for damage to flora and fauna is low due to the urban location of the site and apparent lack of plant and animal life. Potential migration of contaminants from the site via surface runoff and storm sewers could have an adverse impact on Passaic River biota. The potential for damage to offsite property exists through migration of contaminants in groundwater and surface runoff. Contamination was found in the proposed N.J. Turnpike right-of-way adjacent to the eastern site boundary.

EPA RCRA ENFORCEMENT INSPECTION

A RCRA sampling inspection was conducted at Bayonne Barrel and Drum on June 2, 1988 by EPA Region II personnel. The facility was found to be in violation of RCRA and TSCA violations based upon sampling results and a visual inspection of the site. Analytical data showed that several waste ash piles present at the site are considered a hazardous waste due to levels of cadmium above RCRA criteria limits for EP Toxicity. The ash pile in the rear of the property showed PCB contamination of 115 ppm and 293 ppm for arochlor 1248 and 1252, respectively. Approximately 100-150 drums were observed in the drum and ash storage room which were not labeled as a hazardous waste and apparently stored for greater than 90 days.

ENFORCEMENT ACTIONS

An EPA Consent Agreement and Order issued in 1984 cited Bayonne Barrel and Drum Co. for operation of a hazardous waste facility and storage of hazardous wastes without a hazardous waste permit. The order required the facility to implement a soil sampling program and to remove hazardous waste piles present at the site, liquid and sludge from the oil storage tanks, and areas of contaminated soil identified on the property. The facility was also required to submit a closure plan. A soil and groundwater characterization study was completed in 1986, however BBD has not complied with the remaining terms of the consent agreement.

The U.S. Justice Department has filed a suit against the company and its president, Frank Langella, for various violations of RCRA and failure to comply with the terms of the EPA consent agreement. The case is currently

in litigation. An attorney for the U.S. Justice Department has indicated that the facility may be sold to a third party which may be willing to conduct the cleanup, in which case the site would be subject to ECRA regulations. As previously mentioned, BBD filed for bankruptcy in 1982 and has reportedly defaulted on a back loan, thus the bank (First National State Bank) could foreclose and take title to the property but has apparently not done so because they would be considered a responsible party under CERCLA as owner of the site. Both the EPA and U.S. Justice Department have expressed interest in having the NJDEP involved in reviewing any sampling/cleanup plans which may be developed for the site following litigation.

RECOMMENDATIONS

No additional sampling is recommended at this time by the Bureau of Planning and Assessment since adequate data is available which documents the presence of soil and groundwater contamination at the site. A summary of sampling data is attached. At this time the case should be transferred to the Responsible Party Cleanup Element Bureau of Case Management - State Program for overall case management responsibilities. Any future site investigation/remediation efforts should be consistent with ECRA requirements since there is a strong possibility that the facility may be sold following the bankruptcy litigation, thereby necessitating case transfer to the Industrial Site Evaluation Element.

Submitted by:

Edward Gaven

Edward Gaven, HSMS III
NJDEP Bureau of Planning and Assessment
December 2, 1988

SUMMARY OF SAMPLING DATA

I. EPA RCRA INSPECTION AND SAMPLING EPISODE REPORT

Sampling Date: May 16, 1984
Sampled By: EPA Surveillance and Monitoring Branch
Samples: soil - 3
waste (aqueous) - 3
waste (ash/sludge) - 3
Laboratory: EPA Region II Laboratory, Edison, N.J.
Parameters: Soil and ash samples were analyzed for volatile and non-volatile organics, metals, PCB's, and EP Toxicity. Aqueous samples were analyzed for volatile and non-volatile organics, and RCRA characteristics (ignitability, corrosivity).

Sample Description: Soil samples included one each from the area around the underground settling tank, the subsurface tank near the incinerator, and the oil/water separator trench. Ash samples were collected from the ash sludge pile in the rear of the property. Aqueous samples were collected from the underground settling tank, the subsurface tank near the incinerator, and the oil/water separator trench.

Results: Contaminants detected in soil samples included the following substances along with highest concentrations shown in parenthesis: cadmium (59 ppm), chromium (1,200 ppm), copper (1,100 ppm), mercury (27 ppm), lead (4,500 ppm), arochlor 1248 (67.2 ppm), and arochlor 1254 (117.5 ppm). Total volatile organic and base neutral organic concentrations were on the order of 4.1 ppm and 1,950 ppm, respectively. Ash samples showed contamination with cadmium (160 ppm), chromium (3,300 ppm), copper (3,300 ppm), and mercury (21 ppm), while total volatile organic and base neutral organic concentrations were on the order of 400 ppm and 2,000 ppm, respectively. The ash pile in the rear of the property was determined to be EP toxic for cadmium and lead. Contaminants detected in the aqueous waste samples included toluene (4.9 ppm), bis (2-ethylhexyl) phthallate (13 ppm), butyl benzyl phthallate (1.1 ppm), and di-n-butyl phthallate (1.8 ppm).

QA/QC Information: The sampling report contained no information regarding any blank or duplicate samples, or whether the data were subject to a QA/QC review. Sampling was conducted in accord with EPA standard procedures.

File Location: NJDEP/DHWM Metro Field Office, West Orange, N.J.

II. LOUIS BERGER ASSOCIATES REPORT - SAMPLING IN PROPOSED NJ TURNPIKE RIGHT OF WAY.

Sampling Dates: April 25, 26, 28, 1988 and May 5, 6, 27, 1988
Sampled By: Louis Berger Associates, East Orange, N.J.
Samples: soil - 21

groundwater - 2

Laboratory: ETC Laboratory, Edison, N.J.

Parameters: Priority pollutants plus forty

Sample Description: Soil samples included fourteen discrete samples and seven composite samples at depths up to three feet. Groundwater samples were collected from two monitoring wells (15 feet deep) installed along the eastern site boundary.

Results: Soil contaminants included arsenic (73 ppm), cadmium (71 ppm), chromium (590 ppm), copper (870 ppm), lead (8,520 ppm), benzene (31 ppm), ethylbenzene (408 ppm), toluene (321 ppm), 2,4-dimethylphenol (188 ppm), phenol (58.9 ppm), and PAH compounds (up to 861 ppm). Groundwater samples showed contamination with toluene (76.6 ppb), ethylbenzene (15.9 ppb), benzene (5.6 ppb), 2,4-dimethylphenol (860 ppb), phenol (877 ppb), acenaphthene (9.2 ppb), fluorene (3.15 ppb), naphthalene (16.3 ppb), and phenanthrene (4.9 ppb).

QA/QC Information: The sampling report indicated that chain of custody procedures were carried out in accord with EPA and NJDEP procedures. The analytical data were not subject to a QA/QC review by NJDEP, however the lab reports (NJDEP Tier II format) were reviewed by a QA Coordinator from the consulting firm, Louis Berger Associates.

File Location: EPA Surveillance and Monitoring Branch
Edison, N.J.

III. DAN RAVIV ASSOCIATES REPORT - SOIL AND GROUNDWATER CHARACTERIZATION

Sampling Dates: January 18, 1985; October 25-31, 1985; November 27 to December 17, 1985; January 7, 1986.

Sampled By: Dan Raviv Associates, West Orange, N.J.

Samples: soil - 75 (approx.)

sediment - 4

surface water - 1

groundwater - 5

Laboratory: Collob Analytical Laboratory, Berkeley Heights, N.J.

Parameters: Sample parameters included priority pollutants plus forty, volatile organics plus fifteen, PCB's, metals, petroleum hydrocarbons, and dioxin.

Sample Description: Soil samples were collected from nineteen soil borings (up to 15 feet deep) and five well borings (up to 42 feet deep). Approximately 75 soil samples were analyzed at depths up to 22 feet. Sediment samples were collected from the oil separator trench and from drainage canals and floor pits inside three of the buildings surrounding the incinerator area. The surface water sample was collected from the oil separator trench.

Results: The highest levels of contamination are listed as follows:

soil:	total priority volatile organics	22.5 ppm
	total non-priority volatile organics	65.0 ppm
	total petroleum hydrocarbons	173,000 ppm
	PCB's	320 ppm
	arsenic	390 ppm
	cadmium	1,300 ppm
	chromium	3,400 ppm
	copper	15,500 ppm
	lead	8,400 ppm
	mercury	13 ppm
	zinc	5,040 ppm
sediment:	petroleum hydrocarbons	39,400 ppm
	toluene	39 ppb
	PCB's	130 ppm
surface water:	petroleum hydrocarbons	670 ppm
groundwater:	petroleum hydrocarbons	2,000 ppm
	PCB's	53 ppb
	chlorobenzene	67 ppb
	ethylbenzene	1,060 ppb
	toluene	150 ppb
	dichlorobenzene(s)	76 ppb

QA/QC Information: Analytical data included four field blanks, two lab duplicates, and chain of custody records. The data were not subject to a formal QA/QC review by NJDEP.

File Location: EPA Surveillance and Monitoring Branch
Edison, N.J.

IV. EPA RCRA INSPECTION AND SAMPLING REPORT

Sampling Date: June 2, 1988

Sampled By: EPA Surveillance and Monitoring Branch,
Edison, N.J.

Samples: waste (ash piles) - 5
waste (aqueous samples) - 5

Laboratory: EPA Region II Laboratory, Edison, N.J.

Parameters: Volatile organics, non-volatile organics, PCB's, EP Toxicity metals.

Description: Samples were collected from waste ash piles in the furnace room building, the drum and ash storage room, the courtyard area near the incinerator, and from the large ash pile in the rear of the property. Aqueous samples were collected from the oil separator trench, the pump house, the underground holding/settling tank, a drum inside the drum and ash storage room, and from ponded water in the courtyard area.

Results: The highest levels of contamination are listed as follows:

Ash samples:

furnace room ash pile - low levels of volatile organic and PAH compounds.

courtyard ash pile - ethylbenzene (570 ppb), toluene (1,300 ppb), xylene (1,200 ppm), PAH compounds.

drum and ash storage room ash pile - ethylbenzene (1,500 ppb), tetrachloroethylene (1,200 ppb), toluene (2,700 ppb), trichloroethylene (550 ppb), xylene (3,200 ppb), PAH compounds.

ash pile in rear of property - ethylbenzene (5,200 ppb), tetrachloroethylene (1,300 ppb), toluene (12,000 ppb), trichloroethylene (490 ppb), xylene (4,600 ppb), styrene (2,500 ppb), arochlor 1248 (293 ppm), arochlor 1254 (115 ppm), EP Tox cadmium (2.84 ppm), PAH compounds.

Aqueous samples:

oil separator trench - low level volatile organics and PAH compounds.

pump house - ethylbenzene (130 ppb), toluene (660 ppb), vinyl chloride (18 ppb), PAH compounds.

underground tank - low level volatile organics and PAH compounds.

courtyard area - low level volatile organics and PAH compounds.

drum sample - benzene (92 ppm), chlorobenzene (78 ppm), ethylbenzene (1,200 ppm), tetrachloroethylene (62 ppm), toluene (2,400 ppm), xylene (10,000 ppm), dichlorobenzene(s) (200 ppm), dibenzofuran (567 ppb), 2,4-dinitrotoluene (597 ppb).

QA/QC Information: Samples were collected in accord with EPA standard sampling protocol and chain of custody procedures. Analytical data were subject to a QA review by EPA Region II personnel. Samples were split with Interwaste Services Company (ISCO), which was contracted by BBD to collect split samples and observe EPA sampling procedures.

File Location: EPA Surveillance and Monitoring Branch
Edison, N.J.



Site Inspection Report

BAYONNE BARREL AND DRUM COMPANY
154 RAYMOND BLVD.
NEWARK, ESSEX COUNTY, N.J.

EPA ID# NJD 009871401

Hours: 25



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION
01 STATE 02 SITE NUMBER

II. SITE NAME AND LOCATION

01 SITE NAME (Include street name if available)		02 STREET ROUTE NO. OR SPECIFIC LOCATION IDENTIFIER	
Bayonne Barrel and Drum Co.		154 Raymond Blvd.	
03 CITY	04 STATE	05 ZIP CODE	06 COUNTY
Newark	NJ	07105	Essex
09 COORDINATES LATITUDE 40° 43' 56" - LONGITUDE -74° 07' 30" -		10 TYPE OF OWNERSHIP (Check one) <input type="checkbox"/> A PRIVATE <input type="checkbox"/> B FEDERAL <input type="checkbox"/> C STATE <input type="checkbox"/> D COUNTY <input type="checkbox"/> E MUNICIPAL <input type="checkbox"/> F OTHER <input type="checkbox"/> G UNKNOWN	

III. INSPECTION INFORMATION

01 DATE OF INSPECTION 6-2-88	02 SITE STATUS <input type="checkbox"/> ACTIVE <input checked="" type="checkbox"/> INACTIVE	03 YEARS OF OPERATION 1945 1982 BEGINNING YEAR ENDING YEAR	
04 AGENCY PERFORMING INSPECTION (Check one)			
<input checked="" type="checkbox"/> A EPA <input type="checkbox"/> B EPA CONTRACTOR <input type="checkbox"/> C MUNICIPAL <input type="checkbox"/> D MUNICIPAL CONTRACTOR <input type="checkbox"/> E STATE <input type="checkbox"/> F STATE CONTRACTOR <input type="checkbox"/> G OTHER Dan Raviv Associates			

05 OTHER INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Site Inspection Review			()
09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
			()
			()
			()
			()
			()

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO.
Frank Langella	President-BBD	154 Raymond Blvd. Newark, NJ	()
			()
			()
			()
			()
			()
			()

17 ACCESS GAINED BY (Check one) <input type="checkbox"/> PERMISSION <input type="checkbox"/> WARRANT	18 TIME OF INSPECTION	19 WEATHER CONDITIONS

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency Organization)		03 TELEPHONE NO.
Mike Ferriola	EPA Surveillance and Monitoring Branch		(201) 321-6776
04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.
Ed Gaven	NJDEP	DHWM/BPA	609/292-4320
			08 DATE 12 - 07-88 MONTH DAY YEAR



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE NJ 02 SITE NUMBER D009871401

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (CHECK ALL THAT APPLY)

☒ A SOLID
☐ B POWDER/FINES
☐ C SLUDGE
☐ D OTHER _____
☐ E SLURRY
☐ F LIQUID
☐ G GAS

02 WASTE QUANTITY AT SITE

(INCLUDE UNIT OF MEASURE QUANTITY
AND UNIT OF MEASUREMENT)

TONS _____

CUBIC YARDS _____

NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (CHECK ALL THAT APPLY)

☐ A TOXIC
☐ B CORROSIVE
☐ C RADIOACTIVE
☐ D PERSISTENT
☐ E SOLUBLE
☐ F INFECTIOUS
☐ G FLAMMABLE
☐ H IGNITABLE
☐ I HIGHLY VOLATILE
☐ J EXPLOSIVE
☐ K REACTIVE
☐ L INCOMPATIBLE
☐ M NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (SEE ADDENDUM FOR MEASUREMENT AND CAS NUMBERS)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
-YES	arsenic	7440-38-2		390	ppm
YES	cadmium	7440-43-9	Soil Samples	1,300	ppm
S	chromium	7440-47-3		3,400	ppm
LS	copper	7440-50-8	* Concentrations	15,000	ppm
YES	lead	7439-92-1	shown are the highest	8,400	ppm
YES	mercury	7439-97-6	levels detected in	13.6	ppm
YES	zinc	7440-66-6	soil samples.	5,040	ppm
SOL	ethylbenzene	100-41-4	waste ash pile	5,200	ppb
SOL	trichloroethylene	79-01-6	samples	490	ppb
SOL	tetrachloroethylene	127-18-4		1,300	ppb
SOL	toluene	108-88-3		12,000	ppb
SOL	xylene	1330-20-7		4,600	ppb
SOL	styrene	100-42-5		2,500	ppb
OCC	arochlor 1248	12672-29-6		293,970	ppb
OCC	arochlor 1254	11097-69-1		115,400	ppb

V. FEEDSTOCKS (SEE ADDENDUM FOR CAS NUMBERS)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (CITE SOURCE, REFERENCE, E.P., DATE, TIME, LOCATION, METHOD, ETC.)

Investigation and Sampling Episode (Ref. A)
Soil and Groundwater Characterization Report-Dan Raviv Associates (Ref. B)



State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT

LANCE R. MILLER, DIRECTOR

CN 028
Trenton, N.J. 08625-0028
(609) 633-1408
Fax # (609) 633-1454

NOV 02 1990

Date: _____

IN THE MATTER OF THE
BAYONNE BARREL AND DRUM SITE
AND
P.A.P. LIVING TRUST

ADMINISTRATIVE
CONSENT
ORDER

This Administrative Consent Order is issued pursuant to the authority vested in the Commissioner of the New Jersey Department of Environmental Protection (hereinafter "NJDEP" or the "Department") by N.J.S.A. 13:1D-1 et seq. and the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq., and the Spill Compensation and Control Act, N.J.S.A. 58:10-23.11 et seq. and duly delegated to the Assistant Director for the Responsible Party Cleanup Element of the Division of Hazardous Waste Management pursuant to N.J.S.A. 13:1B-4.

FINDINGS

1. P.A.P. Living Trust (hereinafter "PAP") with its main offices located at 333 Wacker Drive, Chicago, Illinois will be purchasing and developing, under a trust agreement, the property known as the Bayonne Barrel and Drum Site located at 154 Raymond Boulevard, Newark, Essex County, New Jersey and designated as Block 5002, Lots 3 and 14 on the City of Newark municipal tax maps (hereinafter "the Site"). The Site is bordered by Route 1 and 9 to the west, the New Jersey Turnpike to the east, and an empty lot to the south. The Site covers approximately 15 acres and consists of three main buildings and a large yard area.

2. The Bayonne Barrel and Drum Company (hereinafter "BBD") operated a drum reconditioning facility at the Site from 1945 until about 1982. BBD employed chains and caustic solutions to remove residues from the drums. BBD, then, allowed the spent solution from the drums to drain into first a 5,000 gallon underground storage tank then to a 60,000 gallon above ground storage tank. BBD discharged the spent solution from the 60,000 gallon above ground storage tank into the sewer under a Passaic Valley Sewage Commission permit.

3. Inspections by the Department in 1982 and 1984 revealed that BBD generated 40,000 pounds per month of incinerator ash and sludge at the Site and approximately 30,000 drums were stacked on the ground in the rear area of the Site. Random survey by the Department indicated that about half of the drums surveyed contained some amount of material.

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4. In 1982 BBD filed for bankruptcy. Currently BBD is an inactive drum reconditioning facility.

5. In 1984 the United States Environmental Protection Agency (USEPA) issued BBD a Consent Agreement and Consent Order for operation of a hazardous waste facility and storage of hazardous waste at the Site without a hazardous waste permit. The Consent Agreement and Consent Order required BBD to implement a soil sampling program and to remove hazardous waste piles present at the Site, to remove liquid and sludge from the oil storage tanks and to remove contaminated soil from the Site.

6. In July of 1986 BBD submitted to the Department a report characterizing the soil and groundwater at the Site (hereinafter "the July 86 Report"). The data reported in the July 86 Report shows that the groundwater is contaminated with volatile organics (VO), petroleum hydrocarbons (PHC), and polychlorinated biphenyls (PCB). The groundwater in the northeast portion of the Site is contaminated with PCBs, 53 parts per billion (ppb), PHCs, 2,000 parts per million (ppm), toluene, 150 ppb and ethylbenzene, 1,060 ppb. The groundwater in the eastern portion of the Site is contaminated with polynuclear aromatic hydrocarbons (PAH), 34 ppb, phenols, 877 ppb and VOs, 98 ppb.

7. The July 86 Report also shows that the soil is contaminated with PCBs, VOs, PHCs and heavy metals. The highest levels of soil contamination detected at the Site are listed in the July 86 Report as follows:

Total priority volatile organics	22,553 ppb
Total non-priority volatile organics	66,935 ppm
Total PHC	173,000 ppm
PCB	320 ppm
Arsenic	390 ppm
Chromium	1,300 ppm
Copper	3,400 ppm
Lead	8,400 ppm
Mercury	13 ppm
Zinc	5,040 ppm

8. On June 2, 1988 the USEPA conducted a Resource Conservation and Recovery Act (RCRA) inspection at the Site. The USEPA found that BBD was in violation of RCRA and the Toxic Substance Control Act based upon sampling results and a visual inspection of the Site. Samples of an ash pile discovered by USEPA near the rear of the Site showed polychlorinated biphenyl concentrations of 115 ppm.

9. In 1988 the U.S. Department of Justice filed a suit against BBD for various violations of RCRA and for failure to comply with the terms of the USEPA Consent Agreement and Consent Order referenced in paragraph 5. The case is currently in litigation.

10. On January 4, 1990, PAP submitted to the Department a RCRA closure plan for the site.

11. The substances referenced in paragraphs 6 and 7 above are defined as pollutants under the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., and as hazardous substances pursuant to the Spill Compensation and Control Act, N.J.S.A. 58:10-23.11 et seq.

12. Based on these FINDINGS, the Department has determined that the hazardous substances and pollutants referenced in paragraphs 6 and 7 herein, have been discharged within the meaning and jurisdiction of the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., and the Spill Compensation and Control Act, N.J.S.A. 58:10-23.11 et seq.

13. To determine the nature and extent of the problem presented by the discharge of pollutants and hazardous substances at the Site and to develop environmentally sound remedial actions, it is necessary to conduct a remedial investigation and feasibility study of remedial action alternatives (hereinafter "RI/FS") for the Site. To correct the problems presented by the discharge, it is necessary to implement a remedial action plan.

14. PAP has informed the Department of its willingness to investigate the Site, and to execute an Administrative Consent Order to ensure that the Site is investigated in accordance with the Department's guidelines.

15. The extent of contamination at the Site has not been fully delineated. ~~Because~~ PAP desires to proceed with its development of the Site prior to the Department undertaking an investigation in accordance with its standard procedures and priorities, all the Department's files regarding the Site are incorporated herein and made a part hereof.

16. To resolve this matter without the necessity for litigation, PAP has agreed to conduct an RI/FS which would lead to the design of a remedial action alternative intended to remedy all pollution at the Site, emanating from the Site, or which has emanated from the Site.

ORDER

NOW THEREFORE IT IS HEREBY ORDERED AND AGREED THAT:

I. Reimbursement of Damages

A. Reimbursement of Prior Costs and Damages

17. Within thirty (30) calendar days after receipt from the Department of a written summary of all costs incurred by the Department to date, in connection with the investigation of, and response to, the matters described in the FINDINGS hereinabove, including the costs associated with the preparation of this Administrative Consent Order, PAP shall submit to the Department a cashier's or certified check payable to the "Treasurer, State of New Jersey" for the full amount of the Department's oversight costs. Payment shall be submitted to the contact listed in paragraph 38 below.

II. Remedial Investigation and Cleanup

A. Remedial Investigation

18. Within thirty (30) calendar days after the effective date of this Administrative Consent Order, PAP shall submit to the Department a detailed draft Remedial Investigation Work Plan (hereinafter the "RI Work Plan") in accordance with the scope of work set forth in Appendices B, C and D, which are attached hereto and made a part hereof.

*Bayonne Barrel and Drum
Site - Soil Investigation
Report*

Bayonne Barrel Participating Parties
Group/de maximis, inc.
Newark, New Jersey

March 1997

TECHNICAL REPORT

Bayonne Barrel and Drum Site - Soil Investigation Report

Bayonne Barrel Participating Parties
Group/de maximis, inc.
Newark, New Jersey

March 1997

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

8 South River Road
Cranbury, NJ 08512-9502
(609) 866-0500

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	2	Analytical Data Packages (submitted under separate cover)

2.4 QA/QC Sampling

Sampling equipment was decontaminated prior to use at each sampling location, and decontamination rinsate was collected in plastic containers that were transported to each sampling location.

Large sampling equipment such as drill rigs, auger flights, drill rods, and drill bits, were decontaminated by washing with a high pressure wash. Particulate matter was removed with a brush as needed. Large sampling devices were cleaned prior to mobilizing to the site, after mobilizing to the site, between each sampling location, and prior to leaving the site.

Quality Assurance/Quality Control (QA/QC) sampling included collection and analysis of two equipment rinse blanks, five blind duplicate samples (one per 20 samples), and five matrix spike (MS) and five matrix spike duplicate (MSD) samples (one MS/MSD set per 20 samples).

The two equipment rinse blanks were collected during the surface soil sampling in the YA on January 8 and 9, 1997, and were analyzed for lead, PCBs, and PCDD/PCDFs based on the soil sample analyses. Rinse blanks were not collected for the Geoprobe sampling conducted at the FCA, STA, and YA boring locations on January 6 and 7, 1997 because dedicated sampling equipment was used to collect each sample.

The five blind duplicate samples were collected from the following locations and analyzed for the indicated parameters:

Sample ID	Sample Location	Sample Depth	Parameters
BBD-D1	YA-1	7 to 9 feet	VOCs, SVOCs, Pesticides, PCBs, Metals, PCDD/PCDF
BBD-D2	YA-3	0 to 2 feet	VOCs, SVOCs, Pesticides, PCBs, Metals, PCDD/PCDF
BBD-D3	YA-13	0 to 2 feet	PCBs, Lead, PCDD/PCDF
BBD-D4	YA-56	0 to 2 feet	PCBs, Lead, PCDD/PCDF
BBD-D5	YA-57	0 to 2 feet	PCBs, Lead, PCDD/PCDF

Additional sample volume for the MS and MSD samples was collected from the following locations:

- YA-2 (4 to 6 feet);
- YA-4 (3 to 5 feet);
- YA-29 (0 to 2 feet);
- YA-52 (0 to 2 feet); and
- YA-58 (0 to 2 feet).

3. Data Review

Tables 1 through 4 summarize the analytical data for the FCA, STA, YA soil borings, and YA surface soil samples, respectively. This section presents a review of the analytical data, which was conducted to identify detections of constituents in the three areas. Detections of VOCs, SVOCs, Pesticides, and PCBs were evaluated based on concentration range and frequency of detection. Metals were identified based on comparison of detected concentrations to typical background concentrations for metals in urban soils in New Jersey (Fields et al 1987). These typical background concentrations are as follows:

Metal	Typical Background Range (mg/kg)	Metal	Typical Background Range (mg/kg)
Aluminum	Not Available	Lead	25.8 - 617
Antimony	<0.02 - 0.69	Manganese	30 - 952
Arsenic	0.34 - 48.9	Mercury	<0.01 - 2.71
Barium	Not Available	Nickel	5.5 - 53.8
Beryllium	0.16 - 35.9	Selenium	<0.01 - 0.15
Cadmium	0.16 - 2.36	Silver	0.04 - 1.53
Chromium	4.9 - 24.6	Thallium	<0.06 - 0.46
Cobalt	Not Available	Vanadium	1.0 - 46.1
Copper	8.84 - 143	Zinc	40.4 - 317

Concentrations of calcium, iron, magnesium, potassium, and sodium were excluded from the evaluation because these are non-toxic, essential elements.

Detected concentrations of dioxins/dibenzofurans were evaluated based on total TCDD equivalents, per the 1989 *Update to the Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxins and -Dibenzofurans (CDDs and CDFs)* (USEPA 1989). According to this method, a set of derived Toxicity Equivalency Factors (TEFs) is used to convert the concentration of any CDD/CDF congener into an equivalent concentration of 2,3,7,8-TCDD. The Total TCDD equivalents for a sample was calculated as the sum of each detected concentration multiplied by its TEF as follows:

$$\text{Total TCDD Equivalent} = \sum [(\text{congener 1 concentration} \times \text{TEF 1}) + (\text{congener 2 concentration} \times \text{TEF 2}) + \dots + (\text{congener "n" concentration} \times \text{TEF "n"})]$$

TEFs for the CDD/CDF congeners detected at the site are as follows:

CDD/CDF Congener	TEF
2,3,7,8-TCDD	1.0

TABLE 1
FURNACE COURTYARD AREA SOIL SAMPLES

Table 1D
Analytical Results - Metals
Furnace Courtyard Area Soil Samples
Bayonne Barrel and Drum Site
Newark, New Jersey

Blasland, Bouck & Lee Sample ID		FCA-1 0-2	FCA-2	FCA2A 0-2	FCA2A 2-4	FCA-3
Laboratory Sample Number		70094003	70092001	70094005	70094006	70092002
Sampling Date		01/06/97	01/06/97	01/06/97	01/06/97	01/06/97
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Sample Depth (feet below ground surface)		(0-2)	(0-2)	(0-2)	(2-4)	(1-3)
PARAMETERS	UNITS					
METALS						
Aluminum	MG/KG	5690	5140	6720	3970	5140
Antimony	MG/KG	172.	48.0	231.	123.	27.5
Arsenic	MG/KG	7.42	4.31	12.4	0.414 U	16.2
Barium	MG/KG	3240	1360	2480	2900	899.
Beryllium	MG/KG	0.355 B	0.542	0.451 B	0.680	0.645
Cadmium	MG/KG	61.0	37.9	42.7	53.9	13.3
Calcium	MG/KG	16000	23100	13800	11600	15400
Chromium	MG/KG	624.	438.	1030	2700	233.
Cobalt	MG/KG	80.8	103.	2690	266.	22.1
Copper	MG/KG	490.	349.	1380	1970	393.
Iron	MG/KG	38200	18100	71300	21800	96500
Lead	MG/KG	3360	3300	5260	13600	1390
Magnesium	MG/KG	2390	5780	3490	1600	7000
Manganese	MG/KG	744.	441.	1040	2410	534.
Mercury	MG/KG	10.1	18.7	4.47	36.3	6.43
Nickel	MG/KG	100.	45.6	192.	83.9	67.0
Potassium	MG/KG	513. B	500. B	415. B	182. B	482. B
Selenium	MG/KG	2.04	2.66	4.08	1.70	6.50
Silver	MG/KG	2.18	1.41	2.73	1.13 B	3.27
Sodium	MG/KG	366. B	47.3 U	75.8 U	52.7 U	235. B
Thallium	MG/KG	1.27 B	0.971 U	3.81	2.85	2.31
Vanadium	MG/KG	24.4	12.2	33.0	3.18	29.1
Zinc	MG/KG	1730	1680	5740	3850	646.

Table 1D (cont.)
Analytical Results - Metals
Furnace Courtyard Area Soil Samples
Bayonne Barrel and Drum Site
Newark, New Jersey

Blasland, Bouck & Lee Sample ID		FCA-4	FCA5(0-1.5)	FCA-6	FCA7 0-2	FCA7 2-4	FCA-8 2-4
Laboratory Sample Number		70092003	70141015	70092004	70094001	70094002	70094004
Sampling Date		01/06/97	01/09/97	01/06/97	01/06/97	01/06/97	01/06/97
Sample Matrix		Soil	Soil	Soil	Soil	Soil	Soil
Sample Depth (feet below ground surface)		(1-3)	(0-1.5)	(0-2)	(0-2)	(2-4)	(2-4)
PARAMETERS	UNITS						
METALS							
Aluminum	MG/KG	4010	4280	7280	1990	6810	6840
Antimony	MG/KG	28.9	125.	112.	26.7	132.	61.2
Arsenic	MG/KG	32.9	4.33 U	14.0	52.9	21.3 U	50.3
Barium	MG/KG	1180	1940	3180	370.	6880	2410
Beryllium	MG/KG	0.550	0.630 B	0.410 B	2.55 B	5.14 B	2.78 B
Cadmium	MG/KG	17.7	136.	143.	0.522 U	55.7	28.6
Calcium	MG/KG	22000	10300	16300	8100 B	16400 B	15700
Chromium	MG/KG	201.	2030	846.	1260	31100	1330
Cobalt	MG/KG	15.3	85.8	56.3	119. B	185. B	50.2 B
Copper	MG/KG	453.	1260	1140	1090	894.	1420
Iron	MG/KG	49300	35400	52500	721000	115000	275000
Lead	MG/KG	2020	10200	8130	1840	172000	7290
Magnesium	MG/KG	1370	1340 B	3500	1180 B	2000 B	2410 B
Manganese	MG/KG	269.	464.	380.	4470	1200	1150
Mercury	MG/KG	8.19	43.9	6.30	0.349	42.1	0.966
Nickel	MG/KG	101.	86.7	130.	1050	240.	276.
Potassium	MG/KG	578. B	231. B	443. B	266. U	655. U	265. U
Selenium	MG/KG	6.19	6.80 B	56.3	7.03 U	17.3 U	7.00 U
Silver	MG/KG	2.25	56.7	4.37	0.983 U	6.95 B	2.60 B
Sodium	MG/KG	386. B	552. U	172. B	1100 U	2710 U	1100 U
Thallium	MG/KG	0.928 U	11.3 U	2.25	22.6 U	55.7 U	22.5 U
Vanadium	MG/KG	36.2	16.0	38.5	42.9	6.65 B	45.2
Zinc	MG/KG	929.	2010	4620	1480	4430	4190

Table 2D
Analytical Results - Metals
Storage Tank Area Soil Samples
Bayonne Barrel and Drum Site
Newark, New Jersey

Blasland, Bouck & Lee Sample ID		STA-1(0-2)	STA-2(0-2)	STA-3(1-3)
Laboratory Sample Number		70109002	70109001	70109003
Sampling Date		01/07/97	01/07/97	01/07/97
Sample Matrix		Soil	Soil	Soil
Sample Depth (feet below ground surface)		(0-2)	(0-2)	(1-3)
PARAMETERS	UNITS			
METALS				
Aluminum	MG/KG	3820	3190	6910
Antimony	MG/KG	3.93	15.7	29.6
Arsenic	MG/KG	9.42	11.3	11.4
Barium	MG/KG	365.	899.	5160
Beryllium	MG/KG	0.287 B	1.09	1.00
Cadmium	MG/KG	6.16	9.83	406.
Calcium	MG/KG	5370	6130	19200
Chromium	MG/KG	72.3	138.	1490
Cobalt	MG/KG	12.4	15.9	69.4
Copper	MG/KG	138.	517.	564.
Iron	MG/KG	23800	31700	32900
Lead	MG/KG	545.	1180	21300
Magnesium	MG/KG	2020	1240	2370
Manganese	MG/KG	151.	221.	216.
Mercury	MG/KG	0.851	1.91	2.15
Nickel	MG/KG	48.2	55.4	61.3
Potassium	MG/KG	687.	315. B	523. B
Selenium	MG/KG	1.37	2.24	35.4
Silver	MG/KG	0.780 B	2.39	1.46 B
Sodium	MG/KG	406. B	347. B	54.5 U
Thallium	MG/KG	1.38	1.11 B	4.02
Vanadium	MG/KG	33.2	26.8	33.6
Zinc	MG/KG	437.	1080	11200

Table 3D
Analytical Results - Metals
Yard Area Soil Borings
Bayonne Barrel and Drum Site
Newark, New Jersey

Blasland, Bouck & Lee Sample ID		YA-1(0-2)	YA-1(7-9)	BBD-D1	YA-1(14-16)	YA-2(0-2)	YA-2(4-6)	YA-2(8-10)
Laboratory Sample Number		70109004	70109005	70109023	70109006	70109007	70109008	70109009
Grid Location		C-5	C-5	C-5	C-5	C-13	C-13	C-13
Sampling Date		01/07/97	01/07/97	01/07/97	01/07/97	01/07/97	01/07/97	01/07/97
Sample Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample Depth (feet below ground surface)		(0-2)	(7-9)	(YA-1(7-9))	(14-16)	(0-2)	(4-6)	(8-10)
PARAMETERS		UNITS						
METALS								
Aluminum	MG/KG	7830	9180	7650	3710	3760	6760	9990
Antimony	MG/KG	70.9	1.99	5.37	0.120 U	7.63	10.7	0.127 U
Arsenic	MG/KG	34.8	7.74	8.84	2.46	97.9	22.9	3.30
Barium	MG/KG	2220	200.	224.	31.3	1620	5320	45.9
Beryllium	MG/KG	0.904 B	0.635	0.576	0.250 B	0.399 B	0.537 B	0.482
Cadmium	MG/KG	85.5	1.68	3.25	0.347 B	0.906 B	23.9	0.0196 U
Calcium	MG/KG	17400	5400	6380	1300	369. B	2090 B	604
Chromium	MG/KG	455.	25.1	34.7	7.49	55.6	40.8	14.5
Cobalt	MG/KG	26.1 B	7.48	7.48	3.82 B	8.07 B	6.77 B	5.39 B
Copper	MG/KG	1710	90.9	102.	13.4	225.	148.	11.3
Iron	MG/KG	129000	22300	24100	9730	95600	88500	18100
Lead	MG/KG	3240	942.	1300	78.1	1350	2280	9.05
Magnesium	MG/KG	4920 B	2790	3020	1270	209. B	1050 B	2350
Manganese	MG/KG	779.	378.	387.	123.	505.	391.	154
Mercury	MG/KG	1.71	0.181	0.214	0.109 U	1.01	0.181	0.115 U
Nickel	MG/KG	950.	23.7	26.0	8.29	26.8	39.7	14.4
Potassium	MG/KG	833. B	1230	1060	308. B	265. B	271. B	688
Selenium	MG/KG	24.4	0.845	1.66	0.249 U	3.93 B	2.73 U	0.264 U
Silver	MG/KG	8.87 B	0.549 B	0.208 B	0.0348 U	0.386 U	0.632 B	0.0369 U
Sodium	MG/KG	457. U	176. B	40.7 U	119. B	434. U	428. U	41.4 U
Thallium	MG/KG	9.39 U	1.19	1.16	0.802 U	8.90 U	8.79 U	1.05 B
Vanadium	MG/KG	42.5	23.2	21.2	10.4	45.7	15.3	23.3
Zinc	MG/KG	3260	330.	994.	97.4	939.	11700	326

Table 3D (cont.)
Analytical Results - Metals
Yard Area Soil Borings
Bayonne Barrel and Drum Site
Newark, New Jersey

Blasland, Bouck & Lee Sample ID		YA-3(0-2)	BBID-D2	YA-3(2-4)	YA-3(4-6)
Laboratory Sample Number		70109020	70109024	70109021	70109022
Grid Location		K-18	K-18	K-18	K-18
Sampling Date		01/07/97	01/07/97	01/07/97	01/07/97
Sample Matrix		Soil	Soil	Soil	Soil
Sample Depth (feet below ground surface)		(0-2)	(YA-3(0-2))	(2-4)	(4-6)
PARAMETERS	UNITS				
METALS					
Aluminum	MG/KG	3280	4400	5290	11600
Antimony	MG/KG	44.4	23.4	22.7	8.77
Arsenic	MG/KG	111.	121.	65.7	80.2
Barium	MG/KG	1430	1740	1730	364.
Beryllium	MG/KG	0.718 B	1.99 B	0.523 B	1.07
Cadmium	MG/KG	28.5	23.0	15.9	5.04
Calcium	MG/KG	8420	12200	20400	5140
Chromium	MG/KG	270.	379.	217.	274.
Cobalt	MG/KG	29.3 B	36.4 B	15.6	12.2
Copper	MG/KG	847.	881.	546.	466.
Iron	MG/KG	95100	101000	56500	41900
Lead	MG/KG	4780	3770	2170	575.
Magnesium	MG/KG	1070 B	1590 B	2330	4710
Manganese	MG/KG	528.	596.	424.	323.
Mercury	MG/KG	2.59	2.65	3.92	7.11
Nickel	MG/KG	129.	158.	114.	44.9
Potassium	MG/KG	430. B	504. B	835.	1880
Selenium	MG/KG	43.4 .	10.7	10.1	2.91
Silver	MG/KG	2.70 B	2.55 B	3.55	2.61
Sodium	MG/KG	409. U	452. U	70.6 B	150. B
Thallium	MG/KG	8.40 U	9.27 U	1.97	2.12
Vanadium	MG/KG	37.8	43.8	38.9	40.8
Zinc	MG/KG	3350	3940	1700	719.

START Sampling Summary

START was tasked by the United States Environmental Protection Agency to sample the eleven active* monitoring wells at the Bayonne Barrel & Drum Site. START conducted this sampling between November 30 - December 2, 1998. START sampled the monitoring wells for the following parameters:

TAL Metals (23 metals), TCL Organics (Volatile Organic Compounds, Semi-Volatile Organic Compounds, Pesticides, PCBs, and specifically requested Wet Chemistry Methods which included Ammonia, Color, Fluoride, Hardness, Nitrate, Nitrite, Odor, Oil & Grease, Total Dissolved Solids (TDS), and Total Petroleum Hydrocarbons (TPH)

*START was unable to sample monitoring well BBD-C2 due to the fact that the inner well casing had collapsed.

Historical Sampling Summary

Historical sampling data reviewed by START indicates that there has been several monitoring well sampling events conducted at the Bayonne Barrel & Drum Site. Historical data obtained by START dates as far back as 1986. There is no record of START or TAT ever sampling the monitoring wells prior to November 1998.

On January 6, 1986, **Dan Raviv Associates, Inc.**, examined monitoring wells BBD-C1, BBD-C2, BBD-C3, BBD-C4, and BBD-C5. The sampling was conducted on behalf of Scheider & Werner, P.A. (Newark, N.J.) and a report was issued on April 18, 1986, updated July, 1986. The monitoring wells were sampled for the following parameters:

BBD-C1, BBD-C2, BBD-C3, BBD-C5: PCBs, TPH, Volatile Organic Compounds
BBD-C4: 129 Priority Pollutants**

**This includes PP+40 (Volatile Organic Compounds (VO+15) and Semi-Volatile Organic Compounds (BNA+25), PP Metals (14 metals), Phenols, and Cyanides.

On May 27, 1986, **Louis Berger and Associates, Inc.**, examined monitoring wells LB-MW1, LB-MW2, and LB-MW3. The sampling was conducted on behalf of the New Jersey Turnpike Authority (New Brunswick, N.J.) and a final report was issued in December, 1986. The monitoring wells were sampled for the following parameters:

LB-MW1, LB-MW2, LB-MW3: PP+40 (Volatile Organic Compounds (VO+15) and Semi-Volatile Organic Compounds (BNA + 25), PP Metals (14 metals), PP Pesticides, Phenols, Cyanides, and PCBs

On June 21, 1988, **Wehran Engineers & Scientists** examined monitoring wells MW-01, MW-02, MW-03, MW-04, and MW-05. The sampling was conducted on behalf of National Inc., (Dedham, Massachusetts) and a report was issued in October, 1988. It is

START's understanding that the monitoring wells examined by Wehran Engineers & Scientists are located off-site at the current Newark Multiplex Cinema. The monitoring wells were sampled for the following parameters:

MW-01, MW-02, MW-03, MW-04, MW-05:

Volatile Organic Compounds, Semi-Volatile Organic Compounds, Pesticides, Herbicides, PCBs, TPH, Phenols, Cyanide, PP Metals (14 metals), and specifically requested Wet Chemistry Methods which included Ammonia, BOD, COD, Chloride, Total Coliforms, Conductivity, TDS, MBAS, Nitrate-Nitrogen, Odor, Oil & Grease, and Sulfates

**BAYONNE BARREL & DRUM SITE
NEWARK, NEW JERSEY**

**REDUCED DATA TABLES
START DATA
NOVEMBER 30 - DECEMBER 2, 1998**

TABL 5
Bayonne Barrel & Drum Site
Metals

			BBD-C1		BBD-C3		BBD-C4		BBD-C5		LB-MW1		LB-MW2		WELL-B		LB-MW3		WELL-A		MW-29WA		2614909-5		2614920	
			START		START		START		START		START		START		START		START		START		START		START		START	
METALS	IDL	NJGWQC	12/02/98		12/01/98		11/30/98		12/01/98		12/02/98		11/30/98		11/30/98		12/02/98		11/30/98		12/01/98		12/02/98		12/02/98	
Aluminum	22.1	200	123	B	63.7	B	31.7	B	46.6	B	43.3	B	286	B	87.7	B	22.1	U	37.9	B	267	B	22.1	U	22.1	U
Antimony	1.7	2	1.7	U	4.5	B	1.7	U	50.9	B	1.7	U	1.7	U	1.7	U	45.1	B	1.7	U	5.9	B	1.7	U	1.7	U
Arsenic*	1.7	0.02	17.2		15.4		21.7		3.3	B	4.2	B	8.7	B	2.8	B	6	B	3.8	B	22.1		9.4	B	7.6	B
Barium	0.4	2,000	125	B	217		288		164	B	434		130	B	104	B	146	B	330		1300		1590		347	
Beryllium*	0.2	0.008	0.20	U	0.22	B	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Cadmium	1.0	4	2.5	B	1.0	B	3.7	B	1.0	U	1.3	B	1	U	1.2	B	1.7	B	1.3	B	4.7	B	1.3	B	2.9	B
Calcium	14.6	None Given	216,000		64,200		286,000		61,700		126,000		76,400		112,000		58,100		118,000		76,000		131,000		239,000	
Chromium	0.6	100	18.4		2.1	B	2.4	B	4.6	B	1.2	B	7.9	B	3.5	B	3.7	B	6.3	B	19.6		4.9	B	3	B
Cobalt	0.4	None Given	6.2	B	4.3	B	1.3	B	3.2	B	1.6	B	1.2	B	0.41	B	2.9	B	0.6	B	115	J	0.93	B	1.6	B
Copper	0.8	1,000	1.4	B	10.7	B	1.7	B	8.6	B	1.2	B	3.2	B	1.1	B	8.3	B	2.2	B	27.3	J	1.3	B	0.95	B
Iron	8.5	300	29,400		1270		62,400		902		11,000		14,300		11,600		804		7910		40,600		23,900		47,000	
Lead	0.7	5	2.5	B	1.6	B	1.1	B	2.1	B	1.4	B	6.5	J	2.4	B	0.7	U	0.7	U	264		3.3		0.7	U
Magnesium	7.9	None Given	38,400		93,500		40,300		11,400		16,800		33,300		47,200		10,400		37,500		8880		41,500		37,200	
Manganese	0.2	50	8800		8350		2460		140		990		1060		1250		130		922		613		225		679	
Mercury	0.1	2	0.10	U	0.10	U	0.1	U	0.37	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.13	B	0.1	U	0.1	U
Nickel	0.7	100	17.3	B	8.7	B	15.5	B	7.5	B	1.4	B	6	B	2	B	7.4	B	12.1	B	541		34.9	B	11.7	B
Potassium	25.9	None Given	38,200	J	65,200	J	38,200	J	7460	J	10,500	J	73,100	J	73,900	J	6580	J	62,800	J	4530	B	31,400	J	53,400	J
Selenium	2.4	50	3.3	B	3.3	B	5		2.4	U	2.4	U	2.4	U	2.4	U	2.4	U	2.4	U	2.4	U	2.4	U	3.5	B
Silver	0.4	N/A	0.40	U	0.40	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.82	B	0.4	U	0.4	U
Sodium	128	50,000	145,000		1,010,000		123,000		114,000		163,000		315,000		443,000		103,000		568,000		41,000		50,400		63,500	
Thallium*	2.9	0.5	5.6	B	5.1	B	5.1	B	2.9	U	2.9	U	2.9	U	2.9	U	5.1	B	2.9	U	2.9	U	2.9	U	2.9	U
Vanadium	0.4	None Given	1.8	B	5.3	B	3.1	B	2.9	B	1.6	B	3.7	B	4.2	B	2.3	B	5.8	B	2.9	B	2.4	B	3.3	B
Zinc	1.5	5,000	1.5	U	1.5	U	5	B	10.6	B	1.5	U	50.6	J	8.5	B	9.5	B	1.5	U	3570		1.5	U	1.5	U

NOTES

*IDL exceeds NJGWQC

All data reported in micrograms per liter (ug/L)

WELL-B is the duplicate sample of LB-MW2

Bold data denotes data that exceeds the NJGWQC

NJGWQC - New Jersey Groundwater Quality Criteria (N.J.A.C. 7:9-6, 8/96)

CRDL - Contract Required Detection Limit

IDL - Instrument Detection Limit (for START's sample analysis)

B - Between the IDL and CRDL

J - Estimated Value

U - Non-Detected Compound

ND - Not Detected

NS - Not Sampled

TABLE 5
Bayonne Barrel & Drum Site
Metals

		LB-MW1	LB-MW2	LB-MW3	BBD-C4
		L. Berger	L. Berger	L. Berger	D. Raviv
METALS	NJGWQC	5/27/86	5/27/86	5/27/86	1/27/86
Aluminum	200	NS	NS	NS	NS
Antimony	2	3.1	2.6	3.1	ND
Arsenic	0.02	2.0	2.0	ND	10.0
Barium	2,000	NS	NS	NS	NS
Beryllium	0.008	ND	ND	ND	ND
Cadmium	4	0.83	ND	2.5	ND
Calcium	None Given	NS	NS	NS	NS
Chromium	100	1.4	2.39	12	ND
Cobalt	None Given	NS	NS	NS	NS
Copper	1,000	7.8	8.39	7.8	40.0
Iron	300	NS	NS	NS	NS
Lead	5	ND	ND	ND	ND
Magnesium	None Given	NS	NS	NS	NS
Manganese	50	NS	NS	NS	NS
Mercury	2	ND	ND	0.65	ND
Nickel	100	ND	22	15	ND
Potassium	None Given	NS	NS	NS	NS
Selenium	50	ND	ND	ND	ND
Silver	N/A	ND	ND	2.0	30.0
Sodium	50,000	NS	NS	NS	NS
Thallium	0.5	ND	ND	ND	ND
Vanadium	None Given	NS	NS	NS	NS
Zinc	5,000	29	69	71.0	30.0

NOTES

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Bayonne Barrel & Drum Site

Volatile Organic Compounds

Historical data indicates that Wehran Engineers & Scientists examined monitoring wells MW-01, MW-02, MW-03, MW-04, and MW-05 on June 21, 1988. In regards to Volatile Organic Compounds of significance, the only contaminant detected above the analytical detection limit was 1,2 Dichloroethene (total).

	NJGWQC	MW-02	MW-03	MW-04
1,2 Dichloroethene (total)	10**	27000	6	9

Semi-Volatile Organic Compounds

In regards to Semi-Volatile Organic compounds, none were detected above the analytical detection limit.

Pesticides and PCBs

In regards to Pesticides and PCBs, none were detected above the analytical detection limit.

Metals

In regards to Metals, the following contaminants were found.

		MW-01	MW-02	MW-03	MW-04	MW-05
		Wehran	Wehran	Wehran	Wehran	Wehran
METALS	NJGWQC	6/21/88	6/21/88	6/21/88	6/21/88	6/21/88
Arsenic	0.02	3220	nd	nd	nd	nd
Barium	2000	nd	237	404	nd	294
Cadmium	4	nd	nd	nd	nd	nd
Chromium	100	nd	nd	nd	nd	nd
Copper	1000	nd	nd	nd	nd	nd
Iron	300	44,700	1480	30,200	20,900	19,400
Lead	5	nd	nd	nd	nd	nd
Manganese	50	3920	278	2430	5050	1360
Mercury	2	nd	nd	0.2	nd	0.2
Selenium	50	nd	nd	nd	nd	nd
Silver	N/A	nd	nd	nd	nd	nd
Sodium	50,000	33,400	68,700	118,000	32,300	182,000
Zinc	5000	115	83	nd	32	34

Wet Chemistry Parameters

In regards to Wet Chemistry Parameters, the following contaminants were found.

		MW-01	MW-02	MW-03	MW-04	MW-05
		Wehran	Wehran	Wehran	Wehran	Wehran
Wet Chemistry Parameters	NJGWQC	6/21/88	6/21/88	6/21/88	6/21/88	6/21/88
Ammonia	500	2290	2890	34,900	21,800	41,900
Total Dissolved Solids	500,000	1,370,000	693,000	1,462,000	1,230,000	1,889,000
Total Petroleum HC	None Noticable	19,100	17,300	10,000	17,800	17,400

*MDL exceeds NJGWQC

**NJGWQC (cis isomer - 10ug/L; trans isomer - 100ug/L)

All data reported in micrograms per liter (ug/L)

Bold denotes data that exceeds NJGWQC

TABLE 5A
Bayonne Barrel & Drum Site
Metals

			BBD-C1		BBD-C3		BBD-C4		BBD-C4		BBD-C5	
			START		START		START		D. Raviv		START	
METALS	IDL	NJGWQC	12/02/98		12/01/98		11/30/98		01/27/86		12/01/98	
Aluminum	22.1	200	123	B	63.7	B	31.7	B	NS		46.6	B
Antimony	1.7	2	1.7	U	4.5	B	1.7	U	ND		50.9	B
Arsenic*	1.7	0.02	17.2		15.4		21.7		10.0		3.3	B
Barium	0.4	2,000	125	B	217		288		NS		164	B
Beryllium*	0.2	0.008	0.20	U	0.22	B	0.2	U	ND		0.2	U
Cadmium	1.0	4	2.5	B	1.0	B	3.7	B	ND		1.0	U
Calcium	14.6	None Given	216,000		64,200		286,000		NS		61,700	
Chromium	0.6	100	18.4		2.1	B	2.4	B	ND		4.6	B
Cobalt	0.4	None Given	6.2	B	4.3	B	1.3	B	NS		3.2	B
Copper	0.8	1,000	1.4	B	10.7	B	1.7	B	40.0		8.6	B
Iron	8.5	300	29,400		1270		62,400		NS		902	
Lead	0.7	5	2.5	B	1.6	B	1.1	B	ND		2.1	B
Magnesium	7.9	None Given	38,400		93,500		40,300		NS		11,400	
Manganese	0.2	50	6800		8350		2460		NS		140	
Mercury	0.1	2	0.10	U	0.10	U	0.1	U	ND		0.37	
Nickel	0.7	100	17.3	B	8.7	B	15.5	B	ND		7.5	B
Potassium	25.9	None Given	38,200	J	65,200	J	38,200	J	NS		7460	J
Selenium	2.4	50	3.3	B	3.3	B	5		ND		2.4	U
Silver	0.4	N/A	0.40	U	0.40	U	0.4	U	30.0		0.4	U
Sodium	128	50,000	145,000		1,010,000		123,000		NS		114,000	
Thallium*	2.9	0.5	5.6	B	5.1	B	5.1	B	ND		2.9	U
Vanadium	0.4	None Given	1.8	B	5.3	B	3.1	B	NS		2.9	B
Zinc	1.5	5,000	1.5	U	1.5	U	5	B	30.0		10.6	B

NOTES

*IDL exceeds NJGWQC

All data reported in micrograms per liter (ug/L)

WELL-B is the duplicate sample of LB-MW2

Bold data denotes data that exceeds the NJGWQC

NJGWQC - New Jersey Groundwater Quality Criteria (N.J.A.C. 7:9-6, 8/96)

CRDL - Contract Required Detection Limit

IDL - Instrument Detection Limit (for START's sample analysis)

B - Between the IDL and CRDL

J - Estimated Value

U - Non-Detected Compound

ND - Not-Detected

NS - Not Sampled

TABLE 5B
Bayonne Barrel & Drum Site
Metals

			WELL-A		MW-29WA	2614909-5		2614920	RIN-001		RIN-002	RIN-003	
			START		START	START		START	START		START	START	
METALS	IDL	NJGWQC	11/30/98		12/01/98	12/02/98		12/02/98	11/30/98		12/01/98	12/02/98	
Aluminum	22.1	200	37.9	B	267	22.1	U	22.1	U	22.1	U	22.1	U
Antimony	1.7	2	1.7	U	5.9	B	1.7	U	1.7	U	1.7	U	1.7
Arsenic*	1.7	0.02	3.8	B	22.1	9.4	B	7.6	B	1.7	U	1.7	U
Barium	0.4	2,000	330		1300	1590		347	0.42	B	0.4	U	1.1
Beryllium*	0.2	0.008	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2
Cadmium	1.0	4	1.3	B	4.7	B	1.3	B	2.9	B	1	U	1
Calcium	14.6	None Given	118,000		76,000	131,000		239,000	14.6	U	14.6	U	55.7
Chromium	0.6	100	6.3	B	19.6	4.9	B	3	1.5	B	0.94	B	1.5
Cobalt	0.4	None Given	0.6	B	115	J	0.93	B	1.6	B	0.82	B	0.75
Copper	0.8	1,000	2.2	B	27.3	J	1.3	B	0.95	B	2	B	0.8
Iron	8.5	300	7910		40,600	23,900		47,000	56.2	B	19.7	B	54.8
Lead	0.7	5	0.7	U	264	3.3		0.7	U	0.7	U	1.1	B
Magnesium	7.9	None Given	37,500		8880	41,500		37,200	26	B	21.9	B	28.2
Manganese	0.2	50	922		613	225		679	3.7	B	2.6	B	3.1
Mercury	0.1	2	0.1	U	0.13	B	0.1	U	0.1	U	0.1	U	0.1
Nickel	0.7	100	12.1	B	541	34.9	B	11.7	B	1.5	B	1.4	B
Potassium	25.9	None Given	62,800	J	4530	B	31,400	J	53,400	J	25.9	U	25.9
Selenium	2.4	50	2.4	U	2.4	U	2.4	U	3.5	B	2.4	U	2.4
Silver	0.4	N/A	0.4	U	0.82	B	0.4	U	0.4	U	0.4	U	0.4
Sodium	128	50,000	568,000		41,000	50,400		63,500	435	B	332	B	301
Thallium*	2.9	0.5	2.9	U	2.9	U	2.9	U	2.9	U	2.9	U	2.9
Vanadium	0.4	None Given	5.8	B	2.9	B	2.4	B	3.3	B	0.4	U	0.4
Zinc	1.5	5,000	1.5	U	3570	1.5	U	1.5	U	1.5	U	1.5	U

NOTES:

*IDL exceeds NJGWQC

All data reported in micrograms per liter (ug/L)

WELL-B is the duplicate sample of LB-MW2

Bold data denotes data that exceeds the NJGWQC

NJGWQC - New Jersey Groundwater Quality Criteria (N.J.A.C. 7:9-6, 8/96)

CRDL - Contract Required Detection Limit

IDL - Instrument Detection Limit (for START's sample analysis)

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U - Non-Detected Compound

ND - Not-Detected

NS - Not Sampled

TABLE 5C
Bayonne Barrel & Drum Site
Metals

			LB-MW1			LB-MW1			LB-MW2			WELL-B			LB-MW2			LB-MW3			LB-MW3		
			START			L. Berger			START			START			L. Berger			START			L. Berger		
METALS	IDL	NJGWQC	12/02/98			5/27/86			11/30/98			11/30/98			5/27/86			12/02/98			5/27/86		
Aluminum	22.1	200	43.3	B	NS				286			87.7	B	NS				22.1	U	NS			
Antimony	1.7	2	1.7	U	3.1				1.7	U		1.7	U	2.6				45.1	B	3.1			
Arsenic*	1.7	0.02	4.2	B	2.0				8.7	B		2.8	B	2.0				5.0	B	ND			
Barium	0.4	2,000	434		NS				130	B		104	B	NS				146	B	NS			
Beryllium*	0.2	0.008	0.20	U	ND				0.20	U		0.20	U	ND				0.2	U	ND			
Cadmium	1.0	4	1.3	B	0.83				1.0	U		1.2	B	ND				1.7	B	2.5			
Calcium	14.6	None Given	126,000		NS				76,400			112,000		NS				58,100		NS			
Chromium	0.6	100	1.2	B	1.4				7.9	B		3.5	B	2.39				3.7	B	12			
Cobalt	0.4	None Given	1.6	B	NS				1.2	B		0.41	B	NS				2.9	B	NS			
Copper	0.8	1,000	1.2	B	7.8				3.2	B		1.1	B	8.39				8.3	B	7.8			
Iron	8.5	300	11,000		NS				14,300			11,600		NS				804		NS			
Lead	0.7	5	1.4	B	ND				6.5	J		2.4	BJ	ND				0.70	U	ND			
Magnesium	7.9	None Given	16,800		NS				33,300			47,200		NS				10,400		NS			
Manganese	0.2	50	990		NS				1060			1250		NS				130		NS			
Mercury	0.1	2	0.10	U	ND				0.10	U		0.10	U	ND				0.10	U	0.65			
Nickel	0.7	100	1.4	B	ND				6.0	B		2.0	B	22				7.4	B	15			
Potassium	25.9	None Given	10,500	J	NS				73,100			73,900	J	NS				6580	J	NS			
Selenium	2.4	50	2.4	U	ND				2.4	U		2.4	U	ND				2.4	U	ND			
Silver	0.4	N/A	0.4	U	ND				0.40	U		0.40	U	ND				0.40	U	2.0			
Sodium	128	50,000	163,000		NS				315,000			443,000		NS				103,000		NS			
Thallium*	2.9	0.5	2.9	U	ND				2.9	U		2.9	U	ND				3.8	B	ND			
Vanadium	0.4	None Given	1.6	B	NS				3.7	B		4.2	B	NS				2.3	B	NS			
Zinc	1.5	5,000	1.5	U	29				50.6	J		8.5	BJ	69				9.5	B	71.0			

NOTES

*IDL exceeds NJGWQC

All data reported in micrograms per liter (ug/L)

WELL-B is the duplicate sample of LB-MW2

Bold data denotes data that exceeds the NJGWQC

NJGWQC - New Jersey Groundwater Quality Criteria (N.J.A.C. 7:9-6, 8/96)

CRDL - Contract Required Detection Limit

IDL - Instrument Detection Limit (for START's sample analysis)

B - Between the IDL and CRDL

J - Estimated Value

U - Non-Detected Compound

ND - Not-Detected

NS - Not Sampled

TABLE 5D
Bayonne Barrel & Drum Site
Metals

		MW-01	MW-02	MW-03	MW-04	MW-05
		Wehran	Wehran	Wehran	Wehran	Wehran
METALS	NJGWQC	06/21/88	06/21/88	06/21/88	06/21/88	06/21/88
Arsenic	0.02	3220	nd	nd	nd	nd
Barium	2,000	nd	237	404	nd	294
Cadmium	4	nd	nd	nd	nd	nd
Chromium	100	nd	nd	nd	nd	nd
Copper	1,000	nd	nd	nd	nd	nd
Iron	300	44,700	1480	30,200	20,900	19,400
Lead	5	nd	nd	nd	nd	nd
Manganese	50	3920	278	2430	5050	1360
Mercury	2	nd	nd	0.2	nd	0.2
Selenium	50	nd	nd	nd	nd	nd
Silver	N/A	nd	nd	nd	nd	nd
Sodium	50,000	33,400	68,700	118,000	32,300	182,000
Zinc	5,000	115	83	nd	32	34

NOTES

All data reported in micrograms per liter (ug/L)

Bold data denotes data that exceeds the NJGWQC

NJGWQC - New Jersey Groundwater Quality Criteria (N.J.A.C. 7:9-6, 8/96)

nd - Not-Detected

HEAVY METALS SOURCE DETERMINATION STUDY

IN COMPLIANCE WITH OCEAN DUMPING PERMIT
NO. II NJ003 INTERIM SECTION 9.01

Passaic Valley Sewerage Commissioners

JOSEPH M. KEEGAN	- Chairman
BEN W. GORDON	- Vice Chairman
THOMAS J. CIFELLI	- Commissioner
VINCENT CORRADO	- Commissioner
ROBERT J. DAVENPORT	- Commissioner
RICHARD M. GIACOMARRO	- Commissioner
CHARLES A. LAGOS	- Commissioner
CARMINE T. PERRAPATO	- Executive Director
ROCCO D. RICCI	- Chief Engineer

PHASE II

APRIL 1980

DRAFT

Elson T. Killam Associates, Inc.

Environmental and Hydraulic Engineers



KLLC13740

PASSAIC VALLEY SEWERAGE COMMISSION - HEAVY METAL SOURCE DETERMINATION
 PHASE II INDUSTRIAL CONTRIBUTION
 SUB-AREA 0

PAGE 3

CONTROL NO.	NAME AND ADDRESS OF INDUSTRY	FLOW MGD	TOTAL CADMIUM LBS/DAY (MG/L)	TOTAL CHROMIUM LBS/DAY (MG/L)	TOTAL COPPER LBS/DAY (MG/L)	TOTAL LEAD LBS/DAY (MG/L)	TOTAL NICKEL LBS/DAY (MG/L)	TOTAL ZINC LBS/DAY (MG/L)	TOTAL ARSENIC LBS/DAY (MG/L)	TOTAL MERCURY LBS/DAY (MG/L)
980	ATLAS REFINERY INC. 142 LUCKMOOD ST. NEWARK	0.0220	0.014 (0.077)	0.338 (1.840)	0.066 (0.358)	0.782 (4.260)	0.136 (0.742)	0.027 (0.149)	0.001 (0.007)	0.000 (0.001)
995	AUTOMATIC PLATING INC. 185 FOUNDRY ST. NEWARK	0.0420	0.022 (0.064)	6.690 (19.100)	0.184 (0.525)	0.033 (0.095)	0.178 (0.508)	12.190 (34.800)	0.000 (0.001)	0.000 (0.002)
1000	AUTOMATIC PLATING METHODS INC. 347 FERRY ST. NEWARK	0.0820	3.529 (5.160)	4.384 (8.410)	3.358 (4.910)	0.193 (0.282)	1.306 (1.910)	29.680 (43.400)	0.002 (0.003)	0.000 (0.000)
1010	BAKER PHOTOGRAPHIC CO. 378 SIXTH AVE. NEWARK	0.0040	0.000 (0.005)	0.001 (0.020)	0.022 (0.649)	0.005 (0.150)	0.003 (0.094)	0.024 (0.720)	0.000 (0.001)	0.031 (0.948)
1020	BATONNE BAKKEL & DRUM CO. 154 KAYBOND BLVD. NEWARK	0.0440	0.448 (1.220)	1.167 (3.380)	0.650 (1.770)	6.715 (18.300)	0.067 (0.183)	3.281 (8.940)	0.021 (0.056)	0.110 (0.300)
1030	BENJAMIN MOORE & CO. 134 LISTER AVE. NEWARK	0.0320	0.016 (0.060)	0.755 (2.830)	1.022 (3.830)	0.899 (3.370)	0.270 (1.010)	2.989 (11.200)	0.009 (0.033)	0.000 (0.000)
1032	BENNET HEAT TREATING CO. INC. 690 FERRY ST. NEWARK	0.0160	0.001 (0.005)	0.001 (0.005)	0.013 (0.098)	0.001 (0.005)	0.001 (0.005)	0.002 (0.013)	0.000 (0.001)	0.000 (0.000)
1035	BESSEMER PROCESSING CO. INC. 135 MAYNES AVE. NEWARK	0.0450	0.021 (0.057)	0.123 (0.327)	0.087 (0.232)	0.310 (0.826)	0.030 (0.080)	0.150 (0.401)	0.016 (0.042)	0.002 (0.005)
1045	BLACK OXIDE PROCESSING CORP. 85 GOTHARD ST. NEWARK	0.0110	0.000 (0.005)	1.477 (16.105)	0.015 (0.168)	0.000 (0.005)	0.000 (0.005)	0.174 (1.895)	0.000 (0.001)	0.000 (0.000)
1050	BLUE LINE INC. 209 PARKHURST ST. NEWARK	0.0160	0.001 (0.008)	1.575 (11.800)	4.777 (35.800)	0.031 (0.233)	3.496 (26.200)	0.063 (0.470)	0.001 (0.011)	0.000 (0.001)

KLE013811



princeton testing laboratory

609-452-9050

Princeton Service Center, US Route One, Princeton, NJ 08540

Mailing Address: PO Box 3108, Princeton, NJ 08543

DATE: October 31, 1986

JOB NO. 86GW3138

TO: [City of Bayonne
Sewer Treatment Plant
Dept. of Engineering
630 Avenue C
Bayonne, NJ 07002
Attn: Ed Herman]

AUTHORIZATION: contract

SAMPLE: Sludge - 1

REPORT OF ANALYSIS

APPENDIX A-2

SLUDGE

mg/kg Dry Weight

Arsenic	1.2
Cadmium	2.7
Chromium	4.8
Copper	175
Lead	314
Mercury	0.6
Nickel	16
Zinc	354
Total Nitrogen	5400
Ammonia Nitrogen	5400
Nitrate Nitrogen	7.1
Oil & Grease	87980
Phenols	< 5.0
Phosphorous	3440
Calcium	34000
Magnesium	3740
Potassium	1650
Cyanide	< .5

Received 10/6/86

/rk

RECEIVED

NOV 20 1986

DEPT. ENVIRON. PROTECTION
Division Water Resources
Bureau of Permits Admin.

Edna A. Alinea
Edna A. Alinea, Manager

Water, Wastewater & Microbiology

**Benjamin Moore &
Company**

The Associated Press

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October 19, 1990, Friday, AM cycle

SECTION: Domestic News

LENGTH: 515 words

HEADLINE: Paint Makers Decry New Reports, Say Nearly All are Mercury-Free

BYLINE: By JEFFREY GOLD, Associated Press Writer

DATELINE: NEWARK, N.J.

KEYWORD: Paint-Mercury

BODY:

Paint companies scrambled to alleviate consumer fears Friday over reports that mercury in interior latex paint can be harmful. Several of the companies said they have not used mercury for years.

The Environmental Protection Agency barred manufacturers from adding mercury to paint after Aug. 20. Paint made before then can still be sold, however.

But the furor followed reports this week of a study that found relatively high levels of mercury in people whose homes were painted inside with latex paint containing mercury.

The study, conducted in 1989, was published in Thursday's issue of The New England Journal of Medicine. Concern about mercury in paint arose last year after a 4-year-old Michigan boy suffered mercury poisoning when his home was painted. He suffered severe rashes, itching, sweating and a personality change.

The EPA's 24-hour hotline for paint information - the National Pesticide Telecommunications Network at 1-800-858-7378 - reported a record 900 calls Thursday.

A trade group for 550 manufacturers, including some of the nation's largest, noted that paint used in the study and to which the boy was exposed contained nearly three times as much mercury as the EPA recommended at the time. The paint was made by the Mercury Paint Co. of Detroit, Mich.

"It was almost certainly at the high end," said Marilyn Ludwig, spokeswoman for the National Paint & Coatings Association in Washington.

"Vague directives" led to the EPA declining Mercury Paint's mercury levels to be an "unenforceable action," agency spokesman Al Heier said.

A telephone call Friday to Charles Soberman, president and owner of Mercury Paint, was not immediately returned.

Most uses of mercury were banned in the mid-1970s, except in paint. Manufacturers had convinced the EPA they didn't have a good alternative to mercury, Heier said. The element is used to preserve the paint in the can and prevent mildew after application.

The EPA estimates that before the recent ban, up to 30 percent of interior latex paint contained mercury. But the industry association believes just 10 percent to 15 percent contained the element, Ms. Ludwig said.

Consumers who own paint bought before the ban should call the manufacturer to determine if it contains mercury, she said. If it has more than 200 parts per million, she recommended using it only outdoors.

Health officials do not recommend removing latex paint from walls. They believe the risk of mercury contamination is highest in the first weeks after application. The mercury evaporates shortly after the paint dries.

Several manufacturers also criticized news reports as misleading.

Sherwin-Williams and Benjamin Moore, two of the nation's largest paint manufacturers, said their products haven't contained mercury since 1973 and 1969, respectively.

John Oberle, technical director for Montvale-based Benjamin Moore, said alternatives to mercury that were less harmful to people and the environment were employed in the mid-1970s, even though they weren't as effective. Those alternative compounds have since been improved, he said.



Benjamin Moore & Co.

PAINTS • VARNISHES • ENAMELS

MONTVALE
NEW YORK
NEWARK
BOSTON
RICHMOND
JACKSONVILLE
NUTLEY

CHICAGO
ST. LOUIS
CLEVELAND
HOUSTON
BIRMINGHAM
DALLAS
GIBBSBORO

DENVER
LOS ANGELES
SANTA CLARA
TORONTO
MONTREAL
VANCOUVER
BURLINGTON

134 LISTER AVENUE

NEWARK, NEW JERSEY 07105-4566

CENTRAL LABORATORIES

(201) 344-1200

February 25, 1991

Passaic Valley Sewerage Commissioners
600 Wilson Avenue
Newark, N.J. 07105

Attn: Industrial Dept.

Re: Permit Renewal #20403112

Dear Nadine:

Enclosed are results of testing the Benjamin Moore & Co. Central Laboratory Newark facility for parameters under section E of the sewer connection application.

This should complete the data required for your evaluation to renew our permit for the Newark facility.

If you have any questions concerning the information provided, please contact the writer.

Very truly yours,

BENJAMIN MOORE & CO.

Wayne Thome

Wayne Thome
Regulatory Affairs

WT:mak
enc.

BBA000012

GARDEN STATE LABORATORIES, INC.

Bacteriological and Chemical Testing

410 Hillside Avenue

Hillside, NJ 07205

Telephone (201) 688-8900

Fax (201) 688-8966

MATHEW KLEIN, M.S., Director

HARVEY KLEIN, M.S., Lab Supervisor

REPORT OF ANALYSIS

TO: BENJAMIN MOORE & COMPANY
134 LISTER AVENUE

REPORT # 901121156

CLIENT # MOO01

DATE SUBMITTED: 11/21/90

NEWARK

NJ 07105

ATT: WAYNE THOME

SAMPLE TYPE: COMPOSITE WATER

SAMPLE ID:

SAMPLE LOCATION: @NEWARK PLANT #1

TIME: 10:45-11:07 A.M.

DATE SAMPLED: 11/21/90

TIME SAMPLED:

ANALYSIS	RESULT	UNITS	
Total Solids	823.	mg/l	
Total Mineral Solids	370.	mg/l	
Total Suspended Solids	220.	mg/l	
Mineral Suspended Solids	42.	mg/l	
Biochemical Oxygen Demand	47.	mg/l	
Chemical Oxygen Demand	554.	mg/l	
Total Organic Carbon	133.	mg/l	
pH	7.38	Standard Units	
Ammonia Nitrogen	13.0	mg/l	
Sulfide	1.0	mg/l	
Ortho Phosphate as P	2.25	mg/l	
Total Kjeldahl Nitrogen	20.1	mg/l	
Antimony	<0.01	mg/l	
Arsenic	<0.010	mg/l	
Boron	0.08	mg/l	
Cadmium	<0.01	mg/l	
Chromium	<0.02	mg/l	
Copper	0.28	mg/l	
Iron	3.20	mg/l	
Lead	0.024	mg/l	
Mercury	<0.0004	mg/l	
Nickel	0.04	mg/l	
Selenium	<0.010	mg/l	
Silver	<0.02	mg/l	
Tin	<1.	mg/l	
Zinc	0.59	mg/l	
Phenols	0.032	mg/l	

< = less than, not detected.

THE LIABILITY OF GARDEN STATE LABORATORIES, INC. FOR SERVICES RENDERED SHALL IN NO EVENT EXCEED THE AMOUNT OF THE INVOICE.

Certified by U.S. Public Health Service, N.J. Dept. of Health and N.J.D.E.P.—Lab #07044

INSTRUMENT LABORATORY

Analysis Report

Date: October 26, 1984

Object Number: 578

Origin: Barry A. Jenkin, Quality Assurance Laboratory

Sample Number:

5012-66-8A Newark Water Waste "D" Tank (8/6/84)

5012-66-8B Newark Wash Water Tank #9 (8/10/84)

Laboratory Book Nos: 23028-75

Wt. per gal.: See Request Form
(lbs.)

Non-Volatile Matter: " " "
(Wt. %)

Ash (Wt. %) Not Applicable

Acid No.: " "
(100% N.V.M.)

pH: See Request Form

Method(s): EPA Extraction Procedure for Solid Waste and Pensky-Martens Closed Cup Tester

Results:

<u>Metal</u>	<u>Concentration (PPM)</u>		<u>Permissible Extract Level (PPM)</u>
	<u>5012-66-8A</u>	<u>5012-66-8B</u>	
Arsenic	0.009	0.018	5.0
Barium	1.04	2.86	100.0
Cadmium	0.043	0.272	1.0
Chromium	0.029	< 0.04	5.0
	< 0.30	< 0.29	5.0
Copper	< 0.005	< 0.001	0.2
Selenium	< 0.002	0.007	1.0
Silver	< 0.04	< 0.04	5.0

The flash point for 5012-66-8A and 5012-66-8B are both greater than 140°F.

ABK000217

Robert J. ...



Benjamin Moore & Co.

Paints • Stains • Clear Finishes

NEWARK PLANT

134 LISTER AVENUE

NEWARK, NEW JERSEY 07105-4566

(201) 344-1200

FAX (201) 344 2716

February 21, 1995

VIA HAND DELIVERY

Mr. Lance R. Richman, P.G.
Emergency and Remedial Response Division
U. S. Environmental Protection Agency
26 Federal Plaza, Room 13-100
New York, New York 10278

RE: Request for information under 42
U.S.C. 9601 et seq.
Diamond Alkali Superfund Site
Passaic River Study Area
Response to Request for Information

Dear Mr. Richman:

Enclosed find Benjamin Moore & Co.'s reponse to the above Request for Information along with a copy of my January 3, 1995 letter to Ms. Hick of your agency confirming the extension granted to Benjamin Moore & Co.

Sincerely yours,

Charles J. Ilsley, Jr.

CJI:mjb
cc: JTRafferty
regaff/ilsley/outside/richman7

ABK000115

Response to Interrogatory

Request for Information Attachment A

1.

Current owner: Benjamin Moore & Co.
Mailing Address: 51 Chestnut Ridge Road
City: Montvale Boro
State: New Jersey
Zip code: 07645
Telephone: 201-573-9600

Current Operator: Benjamin Moore & Co.
Mailing Address: 134 Lister Avenue
City: Newark
State: New Jersey
Zip Code: 07105
Telephone: 201-344-1200

Lot 34 has been operated by Benjamin Moore & Co. since approximately 1958 - 37 years.

Lots 40 and 62 have been operated by Benjamin Moore & Co. since approximately 1925 - 70 years.

The entire facility is comprised of Lots 34, 40, and 62.

2. (a)

Yes, Benjamin Moore & Co. filed a RCRA Part A Hazardous Waste Permit Application with the United States Environmental Protection Agency on November 10, 1980. The Newark facility was listed as a treatment, storage, and disposal facility. The Newark facility was reclassified as a generator on December 8, 1986 and has been listed accordingly ever since.

EPA IDENTIFICATION NUMBER IS ➤ NJD002456242

2. (b)

Yes, the Newark facility had a National Pollution Discharge Elimination System (NJPDES) permit to discharge non-hazardous, non-contact cooling water to the Passaic River, as follows:

<u>NUMBER</u>	<u>DISCHARGE ACTIVITY</u>	<u>DATE ISSUED</u>	<u>EXPIRATION DATE</u>	<u>FORMATION OR BODY OF WATER DISCHARGED TO</u>
NJ0030414	DSW	Unknown	4/30/82	Passaic River ABK000116

Presently the Newark facility has authorization to discharge storm water to surface water, as follows:

SWGA006789 DSW 8/13/93 Current Passaic River

3.

<i>2,3,7,8 tetrachlorodibenzo-p-dioxin or other dioxin compounds</i>	NO
<i>Carbon disulfide</i>	NO
<i>Cadmium</i>	NO
<i>Mercury</i>	NO*,
<i>Lead</i>	NO*,
<i>Nickel</i>	NO
<i>Methyl Ethyl Ketone</i>	NO*,
<i>Benzene /Ethyl Benzene</i>	NO*,
<i>Toluene</i>	NO*,
<i>Chlorobenzene</i>	NO

*, May have been received and utilized in the manufacturing process in prior years.

4. (a)

Not applicable.

4. (b) ..

Not applicable.

4. (b)(i)

Not applicable

ABK000117

4.(b) (ii)

Not applicable.

4. (b) (iii)

Not applicable.

5.

Historically, the Plant Manager or his administrative designate arranged waste management techniques and strategies. Tasks were implemented by factory employees. With the growth of regulatory requirements and reporting necessities, individual supervisors became identified with responsibility of waste management. The term "waste management" became recognized as those activities associated with recycling non specification product back into specification product flow or recycled for beneficial energy content.

The first supervisor identified with the responsibility was Mr. Harold Shippey. The succession of individuals thereafter is described as follows:

5 (a)

Harold Shippey
Gary Soldo
Philip Mangano
John Brauer
Ronald Fallon
Charles Ilsley

There was no on site treatment or processing of hazardous substances for the purpose of disposal.

5 (b)

The Newark facility has hazardous waste manifests which start in 1978. Should additional detail be necessary, the manifests are on file in the Regulatory Affairs Library, Newark Operations, 134 Lister Avenue, Newark, New Jersey 07105.

5 (c)

The Newark facility never employed underground storage tanks.

The Newark facility has never engaged in off site storage activities.

Historically, the Newark facility stored raw materials in the packaging that the raw material was shipped and received in. If a raw material could be affected by cold or rain, the material was stored indoors. Otherwise storage of raw materials occurred out of doors. Solvents were stored in bulk using above ground storage tanks. Smaller quantities of materials were stored in drums. Spill prevention countermeasures have always been in effect.

ABK000118

The Newark facility has always had a segregated plant storm water system because of its position adjacent to the Passaic River. The main paint plant and the vehicles manufacturing department never had floor drains. Sanitary wastes from these locations were directed to the sanitary sewer that is separate and distinct from the storm sewer. The storm sewer is protected from chemical contamination by secondary containment of the various tanks.

The entire Newark facility is surrounded by a flood wall because of its proximity to the Passaic River. The flood wall also serves as an additional containment mechanism to protect the river.

Raw material storage at the Newark facility is accomplished in two ways. Outdoor storage and indoor storage. Storage practices have always been in compliance with all State, Federal, or Local authority regulatory requirements.

Outdoor Storage

Depending upon the demand for the raw material, the Newark facility maintains above ground storage tanks and for lesser demand, drums and totes. The main facility has been completely paved over for many years. Consequently, the underlying ground was protected from the effects of spillage.

The storage tanks were constructed using diking to prevent any potential leak from being released. The diking is 100 year flood elevation or better.

Loading and unloading procedures are in effect and enforced by area supervision. Proper precautions are followed.

Stored liquid raw materials are pumped from storage tanks into the process as necessary for the manufacturing process.

Drums and totes are used to store lower demand items. Presently all drums and totes are either stored under roofed structures to protect rain water or plans are in effect to do so, shortly.

The Newark facility maintains an inventory protocol. Diked locations are observed for cleanliness and structural integrity. Rainwater is observed for visual characteristics of chemical contamination (smell, sheen) and if free of contamination, it is discharged in accordance with the NJPDES permit.

Beginning in 1982, those materials which could not easily be reused in the manufacturing process were collected and mixed together in a roll-off container with a tarp over the top of it. Those materials were incinerated in cement kilns for beneficial energy content recovery. This practice was discontinued in 1994 using waste minimization techniques.

ABK000119

Indoor Storage

The Newark facility maintains indoor storage of substances in three locations; Building 4 and 4A for alkyd and latex resin associated substances, the thindown room portion of building 11, and within the main paint factory. Storage areas are inspected daily and an inventory system is maintained.

6 (a)

(i)

No.

6 (a) (ii)

Not applicable.

6 (a) (iii)

For a brief time, wash waters were discharged to the Passaic Valley Sewerage Authority System. This practice occurred from 1967 to 1968. Prior to 1967, wash water was recycled. The material was simply used in the next batch. The scale of production allowed this practice. The present wash water system originated in 1968 and has been developed to its present state.

6 (b)

(i)

The Newark facility was constructed without floor drains or other disposal drains.

(ii)

Not applicable.

(iii)

See answer to question 6 (b)(i) above.

6 (c) (i)

To the best of our information and belief, the Newark facility has utilized a storm water elimination system since the facility was occupied in 1925.

ABK000120

6 (c)(ii)

The Newark facility maintained an unlined storm water retention pond used to collect storm water runoff from lot 62 as well as some small amount of infiltration from the Passaic River. The storm water elimination system utilized by the Newark facility was separate and distinct from the storm water retention pond.

6 (c)(iii)

Not applicable, since there were no discharges.

6 (d)

There are no waste water disposal systems at the facility since all waste waters are recycled.

7 (a)

Please find enclosed waste minimization reports to the New Jersey Department of Environmental Protection and Energy from 1989. Prior to this time records were not kept. Hazardous waste manifests were prepared for all hazardous waste generated and disposed of off site (See answer to question 5(b) above). There was no on site disposal other than incineration of solvents in the boilers of the facility for their beneficial energy content.

7 (b)

No, the Newark facility never discharged hazardous substances into the Passaic River.

8.

The Newark facility has never sustained a major incident concerning the leakage, spillage, explosion, fire or other incident of accidental material discharge which resulted in discharge to the Passaic River or release on the property.

9.

See answer to question 8 above.

10. (a)

(i) (ii)

No

10. (b)

Not applicable

ABK000121

11.

Not applicable

12.

The Newark facility maintains hazardous waste manifests at the Regulatory Affairs Department on-site, Benjamin Moore & Co., Newark Operations, 134 Lister Avenue, Newark, NJ 07105. These are the documents which relate to generation of materials used for beneficial energy recovery. The documents are a matter of public record.

13.

The Newark facility performed chemical analyses of relevant environmental media pursuant to regulatory permit requirements. Those analyses are a matter of public record. In addition to this, the New Jersey Department of Environmental Protection and Energy analyzed the elements of a storm water retention pond. The results of these analyses are also a matter of public record. The analyses are available in the Regulatory Affairs Department, Newark Operations, 134 Lister Avenue, Newark, NJ 07105.

14.(a) Yes

lot 34:

<u>NAME</u>	<u>OPERATOR/OWNER</u>	<u>FROM</u>	<u>TO</u>
M.A.C. Corporation in care of: John P. Callaghan, Mary D. Callaghan & Dorothy G. Callaghan	Owner/Operator	3/31/39	11/20/42
John P. Callaghan & Dorothy G. Callaghan	Owner	11/20/42	11/20/42
Callaghan Corporation	Owner/Operator	11/20/42	8/15/44
John P. Callaghan Inc.	Owner/Operator	8/15/44	1/24/49
Mary D. Callaghan	Owner	1/24/49	1/24/49
One-Thirty Lister Corporation	Owner/Operator	1/24/49	12/13/50
Hydrocarbon Chemicals, Inc.	Owner/Operator	12/13/50	2/25/58
Benjamin Moore & Co.	Owner/Operator	2/25/58	Present

ABK000122

lot 40 & 62:

<u>NAME</u>	<u>OPERATOR/OWNER</u>	<u>FROM</u>	<u>TO</u>
American Agricultural Chemical Company	Owner/Operator	7/1924	2/11/25
Benjamin Moore & Co.	Owner/Operator	2/11/25	Present

14. (b)

This question is not applicable.

14. (c)

See answer to question 14(a) above.

15. (a)

Benjamin Moore & Co.

(b)

Maurice C. Workman, President
51 Chestnut Ridge Road
Montvale, New Jersey 07645

(c)

New Jersey
Edwin K. Large, Jr., Esq. → Agent for Service of Process
117 Main Street
Flemington, NJ 08822

(d)

See Attached

(e)

Subsidiaries of Benjamin Moore & Co.
Benjamin Moore & Co., Limited
Alachua Tung Oil Company
Technical Coatings Co.
Technical Coatings Co., Limited
Benjamin Moore & Co. (NZ) Limited
Benjamin Moore Pacific Limited

ABK000123

(f)

Not Applicable

(g)

See answer to question 15(e) above

(h)

Benjamin Moore & Co., Limited
September 11, 1906
Province of Ontario, Canada

Alachua Tung Oil Company
April 23, 1924
Florida

Technical Coatings Co.
December 31, 1903
Pennsylvania

Technical Coatings Co. Limited
October 31, 1949
Province of Ontario, Canada

Benjamin Moore & Co. (NZ) Limited
June 19, 1991
Auckland, New Zealand

Benjamin Moore Pacific Limited
April 12, 1994
Auckland, New Zealand

Agent for Service of Process - See answer to question 15(c) above.

(i)

Not Applicable

16.

Charles J. Ilsley, Jr.
Regulatory Affairs Supervisor
Benjamin Moore & Co.
134 Lister Avenue
Newark, New Jersey 07105
(201) 344-1200 xt 5292

ABK000124

John T. Rafferty, Esq. - Assisted in responding
Benjamin Moore & Co.
General Counsel
51 Chestnut Ridge Road
Montvale, New Jersey 07645
(201) 573-9600

Karl J. Rohrbacher, Esq. - Assisted in responding
Benjamin Moore & Co.
Assistant General Counsel
51 Chestnut Ridge Road
Montvale, New Jersey 07645

JoAnn Glaccum, Esq. - Assisted in responding
Benjamin Moore & Co.
Corporate Attorney
51 Chestnut Ridge Road
Montvale, New Jersey 07645
(201) 573-9600

ABK000125

CERTIFICATION OF ANSWERS TO REQUEST FOR INFORMATIONState of New Jersey :County of Bergen :

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document (response to EPA Request for Information) and all documents submitted herewith, and that to the best of my information, knowledge and belief, the submitted information is true, accurate, and complete, and that all documents submitted herewith are complete and authentic unless otherwise indicated. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. I am also aware that my company is under a continuing obligation to supplement its response to EPA's Request for Information if any additional information relevant to the matters addressed in EPA's Request for Information or the company's response thereto should become known or available to the company.

Charles J. Ilsley, Jr.

NAME (print or type)

Regulatory Affairs Supervisor

TITLE (print or type)

Charles J. Ilsley, Jr.
SIGNATURESworn to before me this day of February 21, , 19 95Michelle P. Clements

NOTARY PUBLIC

MICHELLE P. CLEMENTS
NOTARY PUBLIC OF NEW JERSEY
MY COMMISSION EXPIRES JULY 22, 1993

ABK000126



Vinson & Elkins

ATTORNEYS AT LAW

VINSON & ELKINS L.L.P.
ONE AMERICAN CENTER
600 CONGRESS AVENUE
AUSTIN, TEXAS 78701-3200

TELEPHONE (512) 495-8400
FAX (512) 495-8612

WRITER'S TELEPHONE

(512) 495-8568

June 21, 1995

VIA FEDERAL EXPRESS

Mr. Lance Richman
U.S. Environmental Protection Agency
290 Broadway, 19th Floor
Room W-20
New York, New York 10007-1866

Re: Sources of Hazardous Substances in the Passaic River Study Area:
Benjamin Moore & Company

Dear Lance:

As I have discussed with Patricia Hick, enclosed please find a memorandum commenting on the response of Benjamin Moore & Company to the EPA's request for information under Section 104(e) of the Comprehensive Environmental Response, Compensation and Liability Act. The memorandum is accompanied by a number of documents, indexed and bound for your ready reference.

Please do not hesitate to contact me if you or any members of your team have questions or comments. We look forward to working with you.

Very truly yours,


Amanda G. Birrell

Enclosures

cc: Ms. Patricia C. Hick
Mr. Gerald R. Connolly

ABK000161

MEMORANDUM

June 21, 1995

TO: Lance Richman

FROM: Maxus Energy Corporation Responding on Behalf of Occidental Chemical Corporation

RE: Benjamin Moore & Company

PURPOSE AND SCOPE

This memorandum presents to EPA evidence that Benjamin Moore & Company ("Benjamin Moore") is a Potentially Responsible Party ("PRP") for the Passaic River Study Area within the meaning of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"). This memorandum also comments on Benjamin Moore's response (the "Response") to EPA's Request for Information under § 104(e) of CERCLA.

Specifically, documents demonstrate that

- Benjamin Moore has used hazardous substances at its facility at 134 Lister Avenue in Newark, New Jersey since 1925, including arsenic, lead, xylene, and methyl ethyl ketone.
- Benjamin Moore discharged hazardous substances to the Passaic River through several mechanisms including direct discharges to the Passaic River and discharges to the storm sewer system which discharged to the Passaic River.
- Benjamin Moore also discharged process waste to the sanitary sewer which infiltrated the storm sewer and discharged to the Passaic River through the Lockwood Street outfall.
- Hazardous substances like those used on the property were found in River sediments adjacent to the property.

The table attached at Tab A summarizes the facts demonstrating the liability of Benjamin Moore for the Passaic River Study Area.

ABK000162

CONCLUSION

1. EPA should immediately notify Benjamin Moore that it is a PRP for the Six Mile Study Area because public documents collected by Maxus and attached to this memorandum demonstrate that Benjamin Moore arranged for the disposal of hazardous substances to the Six Mile Study Area.
2. If the agency wishes to collect additional information, the agency can insist that Benjamin Moore provide complete accurate answers to the questions it has already propounded, as well as an explanation of the activities undertaken by Benjamin Moore to formulate its response.

I. Benjamin Moore is a PRP for the Passaic River Study Area

Since 1925, Benjamin Moore has owned and operated at least some portion of the facility located at 134 Lister Avenue in Newark, New Jersey. Benjamin Moore has historically manufactured interior and exterior paints as well as varnishes and alkyd at this facility. In the course of its operations, **Benjamin Moore utilized in processing or cleaning operations on the property hazardous substances including arsenic, xylene, chloroform, methanol and methyl ethyl ketone.** See documents attached at Tab B which include a PVSC Waste Effluent Survey, 1991 Hazardous Waste Report, and a 1992 Community Right to Know Survey. In addition, **Benjamin Moore's Response states that mercury, lead, benzene, ethyl benzene, and toluene may have been received and utilized in the manufacturing processes at the site in earlier years.** Response at page 3. Moreover, although the Response denies the use of chlorobenzene on site, chlorobenzene was commonly used as a solvent in the paint industry.

Although Benjamin Moore's Response states that there were no discharges to the Passaic River from the Benjamin Moore site, public documents demonstrate that this is simply not the case. In fact, several pathways existed for contamination and hazardous substances utilized at the Benjamin Moore facility to be discharged to the Passaic River.

First, **Benjamin Moore directly discharged to the Passaic River.** A 1969 report by the United States Department of Interior located two pipes having a 60" and a 10" diameter respectively along the waterfront of the Benjamin Moore property discharging to the Passaic River. See, Excerpt from Report on the Quality of the Interstate Waters of the Lower Passaic River and Upper and Lower Bays of New York Harbor attached at Tab C. In addition, in 1969, Benjamin Moore was issued an Administrative Order from the New Jersey Bureau of Water Pollution Control for "discharging industrial waste and other polluting material into the Passaic River" and for discharging harmful, deleterious and polluting material from a sewer or drain into the Passaic River. See New Jersey State Department of Health Administrative Order at Tab D. As of 1973, Benjamin Moore was still not in compliance with the Administrative Order and samples taken from a surface water runoff pipe with a 6" diameter found unacceptable levels of color, turbidity, pH, suspended solids, chemical oxygen demand and biological demand.

See, Correspondence between Benjamin Moore and the New Jersey Department of Environmental Protection Regarding the Administrative Order at Tab E.

Contaminated storm water runoff from the facility has also discharged to the Passaic River. In the 1950's, Benjamin Moore started to produce latex paints and allowed the latex wash water to run into two lagoons located at the facility. See Letter from Benjamin Moore to PVSC at Tab F. The production of latex paints is known to involve chemicals such as lead, copper, mercury, zinc, benzene, ethyl benzene, chlorobenzene, xylene and toluene.¹ As a result, soils at the facility are contaminated with hazardous substances. Benjamin Moore has discharged contaminated storm water directly to the Passaic River and through the Lockwood Street storm sewer. From approximately 1969 to the early 1980's, Benjamin Moore used an on-site earthen retention basin to collect storm water runoff which was connected to the City of Newark's storm sewer. See New Jersey Department of Environmental Protection Investigative Report dated November 1984 at Tab G. Moreover, a 1979 report of sources of pollution to the Passaic River stated that surface and roof drainage from the Benjamin Moore facility was pumped directly into the Passaic River. See excerpt from Clinton Bogert Associates, *Pollution Abatement Program Report*, 1979 attached at Tab H. Thus, contaminated storm water runoff discharges from Benjamin Moore directly to the Passaic River and from the Lockwood Street storm sewer are another avenue of discharge to the Passaic River.

In addition, for a period of time, the industrial waste that Benjamin Moore discharged to the sanitary sewer system infiltrated the Lockwood Street storm sewer and discharged to the Passaic River. During the 1960's until approximately 1973 or 1974, Benjamin Moore disposed of latex wash water into the sanitary system. See Letter from Benjamin Moore to PVSC attached at Tab F. Since the production of latex paints involved hazardous substances, the latex wash water discharged to the sanitary sewer contained hazardous substances. It is documented that during the time period Benjamin Moore discharged latex wash water to the sanitary sewer, these discharges ultimately reached the Lockwood Street storm sewer and the Passaic River. See Newark Testing Laboratories Report, *Pollution of Passaic River By Lockwood St. Storm Sewer* dated in 1967, at Tab I. This report indicates that there were eroded openings in the sanitary sewer line which resulted in discharges to the storm sewer. *Id.* The report also notes that tests of paint solids in the sanitary sewer were found to be the same as paint solids in the storm sewer. *Id.* As late as 1984, Benjamin Moore still discharged industrial waste from a fume scrubber and a cleaning solution used to clean portable tanks to the sanitary sewer which may have discharged to the Passaic River. See Letter from Benjamin Moore to the PVSC at Tab F.

¹ See EPA, *Development Document for Proposed Effluent Limitations Guideline, New Source Performance Standards, and Pretreatment Standards for the Paint Formulating Point Source Category*, December 1979. It should be noted that Benjamin Moore participated in this EPA study. See also, EPA, *Preliminary Data Summary for the Paint Formulating Point Source Category*, 1989.

PVSC documents also indicate that as early as 1961 "polluting materials" from the Lockwood Street storm sewer near Benjamin Moore were being discharged into the Passaic River. In 1968, the PVSC still noted that polluting material was being discharged from the Lockwood Street storm sewer to the Passaic River. See Letters from PVSC to City of Newark at Tab J. Benjamin Moore was the only facility adjacent to the Lockwood Street storm sewer. See Excerpt from Clinton Bogert Associates report at Tab H. As a result, it is highly likely that Benjamin Moore was the source of many of the pollution incidents in the Lockwood Street storm sewer.

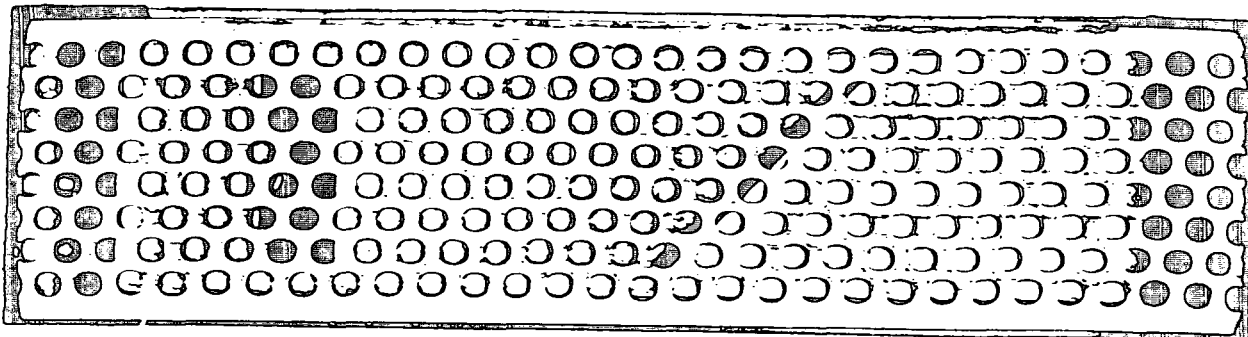
Finally, Benjamin Moore has been named as a potentially responsible party for two state superfund sites within the Six Mile Study Area: the Avenue P Landfill and the D & J Trucking Site. Both of these sites were dumping grounds for wastes generated at the Benjamin Moore facility on Lister Avenue. The contamination at these sites, caused by wastes generated by Benjamin Moore, include numerous hazardous substances associated with the manufacture of paints. These substances include arsenic, mercury, lead, cadmium, along with volatile organics. In addition, both of these sites drain contaminated storm water to the Passaic River. Reports on these sites are included behind Tabs K and L.

Passaic River sediments reflect the discharges of Benjamin Moore. Sample cores taken adjacent to the Lockwood Street storm sewer at various depths contain substantial concentrations of benzene, chlorobenzene, toluene, ethyl benzene, xylene, methyl ethyl ketone, arsenic, lead, copper, mercury and zinc. See table attached at Tab A. These substances are known to have been used by Benjamin Moore at the property or are known to be associated with the manufacture of paints.

II. Benjamin Moore Should Provide Complete Accurate Answers to the Questions the Agency has Already Propounded.

The Response is nonresponsive in many respects. For example, the questions regarding process operations are simply not answered even though this information is applicable and was specifically requested. (Question 4). In addition, the Response is also inaccurate based on documents attached to this memorandum. For example, documents behind Tabs C through J indicate discharges to the Passaic River even though the Response denies that any hazardous substances were discharged to the Passaic River. This suggests that Benjamin Moore did not perform a thorough investigation in responding to the 104(e) request since these documents are publicly available. A follow-up letter to Benjamin Moore which insists on a complete response to all questions, as well as an explanation of all activities undertaken to formulate the response, might yield additional information.

Moreover, the Response does not identify the haulers used from this site but instead refers EPA to Benjamin Moore's hazardous waste manifests that are stored at the site. Given that Benjamin Moore has been notified that it is a PRP for the D & J Trucking Site, EPA should promptly inspect these documents or instruct Benjamin Moore to immediately forward copies of these documents to the agency.



is your RETURN ADDRESS complete on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

President
Benjamin Moore and Company
51 Chestnut Ridge Road
Borough of Montvale, NJ 07654

4a. Article Number

IB536 031 914

4b. Service Type

- ☐ Registered ☐ Insured
☐ Certified ☐ COD
☒ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

5. Signature (Addressee)

McW...

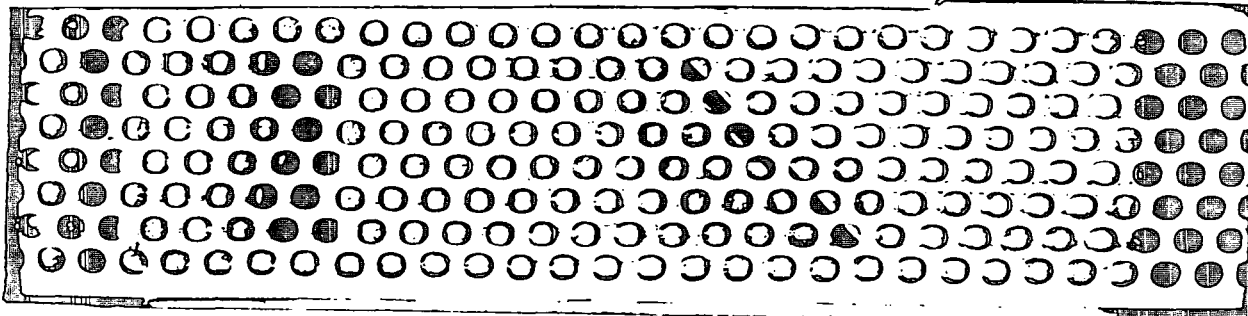
6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1991 U.S. GPO: 1993-352-714

DOMESTIC RETURN RECEIPT

Thank you for using Return Receipt Service.



ABK000166

MEMORANDUM

January 15, 1996

TO: Lance Richman

FROM: Maxus Energy Corporation Responding on Behalf of Occidental Chemical Corporation

RE: Benjamin Moore & Company

PURPOSE AND SCOPE

This memorandum comments on Benjamin Moore & Company's Second Response (the "Second Response") to EPA's Second Request for Information under Section 104(e) of the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), and requests EPA to notify Benjamin Moore that it is a PRP for the Passaic River Study Area.

CONCLUSION

As stated in Maxus' memo to EPA dated June 15, 1995, EPA should notify Benjamin Moore that it is a PRP for the Six Mile Study Area because evidence provided to EPA demonstrates that Benjamin Moore arranged for the disposal of hazardous substances to the Passaic River Study Area. Specifically

- (1) Benjamin Moore used hazardous substances at its facility at 134 Lister Avenue;
- (2) Benjamin Moore discharged hazardous substances to the Passaic River through several mechanisms; and
- (3) Hazardous substances like those used on the property were found in Passaic River sediments adjacent to the storm sewer outfall near the property.

Nothing in Benjamin Moore's First or Second Response defeats the conclusion that Benjamin Moore is a potentially responsible party for the Passaic River Study Area.

ABK000347

DISCUSSION

A. Benjamin Moore used many hazardous substances at the facility at 134 Lister Avenue.

Documents submitted by Maxus to EPA and Benjamin Moore's First and Second Responses demonstrate that Benjamin Moore received, utilized or currently utilizes compounds containing the following hazardous substances in the course of its operations at 134 Lister Avenue:

- arsenic;
- xylene;
- ethyl benzene;
- chloroform;
- methanol;
- methyl ethyl ketone;
- toluene;
- copper;
- zinc; and
- methylene chloride

Benjamin Moore also admits that it may have utilized mercury, lead, and benzene in its operations at the facility on Lister Avenue.

In addition, paint manufacturing typically generates two sources of wastes: paint sludges and spent solvents. These wastes streams would be composed of a variety of hazardous substances. See letter from SECOR International Incorporated describing paint related waste characteristics and chemical composition originating from the Benjamin Moore facility attached at Tab A.

Specifically, as the letter from SECOR explains, the latex emulsion wash water Benjamin Moore discharged to surface lagoons until the 1960s contained at least the following hazardous substances: lead, cadmium, zinc, arsenic, barium, and copper. These paint wastes contaminated site soils and surface water runoff discharged to the Passaic. Similarly the latex wash water Benjamin Moore discharged to the sanitary sewer from the 1960s up until 1973 or 1974 and which leaked into the storm sewer also contained at least the same following hazardous substances.

B. Public Documents Demonstrate that Benjamin Moore discharged hazardous substances to the Passaic River.

Maxus identified and provided supporting documentation of the many mechanisms through which Benjamin Moore discharged hazardous substances to the Passaic River in its Memo

dated June 15, 1995. Briefly, in 1969 the Department of the Interior found two pipes from the facility directly to the River. In 1969 Benjamin Moore was cited by the PVSC for its direct discharge of polluting materials directly to the River, and it had not cured the violation by 1973. The facility used to store paint wastes containing hazardous substances in surface lagoons and contaminated surface water was discharged to the Passaic. Benjamin Moore's process waste was discharged to the sewer and through erosions in the sewer line to the storm sewer. Benjamin Moore's statements in its First and Second Responses regarding the handling of wastes at the facility and denying discharges from the facility are directly contradicted by public documents describing Benjamin Moore's operations. The summary below illustrates some of the inconsistencies between Benjamin Moore's Responses and public documents.¹

Statement

Facts

1. Benjamin Moore & Co. did not have waste lagoons at the plant property in which wash water from the manufacture of latex emulsion paint was stored. (Second Response, Number 13).

1. Letter from Garry Lehnert, Chief Engineer at Benjamin Moore to the Passaic Valley Sewerage Commission ("PVSC") in 1980, *see* letter at Tab B, states that in the 1950s latex emulsion wash water "was run into two lagoons, one of which would be in service while the other was allowed to dry out so the solid material could be dug out with a back hoe."

¹ Benjamin Moore states in its First and Second Responses that it was not necessary to contact former employees to respond to EPA's questions. However, if Benjamin Moore had taken the time to contact former employees, it might have discovered these facts.

2. Benjamin Moore & Co. did not dispose of industrial waste from the property into a sewer system. Furthermore, the fume scrubber operation never generated industrial waste. (Second Response, Number 11). A closed tank cleaning system which operated from 1981 to 1994 consisted of a gas fixed boiler, piping and spray booths. (Second Response, Number 12).

3. For a brief time, wash waters were discharged to the Passaic Valley Sewage Authority System. This practice occurred from 1967 to 1968. (First Response, Number 6(a)(iii)).

2. The same letter from Garry Lehnert to the PVSC states that "[w]e do have two types of industrial waste entering the sewer at the present time. One of these is the water from a fume scrubber, which I believe I mentioned to you, and which I suspect accounts for the material we saw floating in the sewer pit yesterday. The other item which I learned about from talking with our personnel is the material removed from a plant tank cleaning system" [i.e. the system was not totally closed].

3. The same letter from Garry Lehnert in 1980 states that "[d]uring the 1960s our management decided that the lagoons were unsightly and we were told to find other means of disposal. This resulted in a period of time during which we disposed of the latex wash water into the sanitary system ... disposal of wash water into your system was discontinued about six or seven years ago" [i.e. from the 60s to 1974].

In addition, Benjamin Moore's response to the Heavy Metal Source Determination Study conducted by Elson T. Killam Associates in 1978 states that copper, lead, nickel, and zinc were discharged to the PVSC system. *See* Benjamin Moore Industrial Wastewater Questionnaire at Tab C. Industrial wastes discharged by Benjamin Moore to the sanitary sewer infiltrated the Lockwood Street storm sewer and discharged to the Passaic River. *See* 1967 letter from the Newark Testing Laboratories to the City of Newark, previously submitted by Maxus to EPA also enclosed at Tab D, which states that "sewage from the sanitary sewer on Lister Avenue has corroded and eroded its way into the storm sewer." PVSC documents also demonstrate that the Lockwood Street storm sewer was a continuing source of polluting materials to the Passaic River for a significant period of time. Thus, public documents clearly demonstrate that Benjamin Moore discharged hazardous substances to the Passaic River.

ABK000350

Denials notwithstanding, Benjamin Moore has not submitted any information which contradicts the conclusion that they are a PRP for the Six-Mile Study Area. Whether Benjamin Moore can recall ever receiving the 1969 Administrative Order from the New Jersey Department of Health is irrelevant: the document was issued to Benjamin Moore for "discharging industrial waste and other polluting material into the Passaic River" and for discharging harmful, deleterious and polluting material from a sewer or drain into the Passaic River. In addition, even if the two pipes located along the waterfront of the Benjamin Moore property only discharged storm water to the Passaic River as Benjamin Moore claims, this storm water would be contaminated from the use of two lagoons on the property to contain wash waters from latex emulsion activities.

Finally, Benjamin Moore is a potentially responsible party for the Six-Mile Study Area because the New Jersey Department of Environmental Protection documents provided to EPA state that Benjamin Moore was named as a potentially responsible party for the Avenue P Landfill and the D & J Trucking state superfund sites. Both of these sites were dumping grounds for wastes generated at the Benjamin Moore facility on Lister Avenue, and both of these sites impact the Six-Mile Study Area.

C. Passaic River sediments reflect the discharges of Benjamin Moore.

Sample cores taken adjacent to the Lockwood Street storm sewer at various depths contain substantial concentrations of benzene, toluene, xylene, methyl ethyl ketone, arsenic, lead and mercury. These substances are known to have been used by Benjamin Moore at the property or are known to be associated with the manufacture of paints.

F:\lab0695\max:525\cor\epa\richm024

ABK000351

Attachment 1

**Supplement to Second and First Request
for Information: Benjamin Moore and Passaic River
Study**

ABK000366

Attachment 1.

Supplement to Second and First Request for Information: Benjamin Moore and Passaic River Study

SR Question 1. 1969 Administrative Order from New Jersey State Department of Health.

On August 15, 1969, the Water Pollution Control Program ("WPCP") of the New Jersey State Department of Health (the "State"), issued an administrative order to Benjamin Moore & Co. ("BMC") pursuant to the provisions of R.S. 58:12-2. (Enclosure 1). In response to a BMC inquiry for the specific details on which the order was based, in a Sept. 4, 1969 letter the State indicated that the alleged violation was based on "pollution of the Passaic River in terms of odor, turbidity, color, biochemical oxygen demand, chemical oxygen demand, ether soluble matter and suspended solids." (Enclosure 2). This was followed by a meeting at Trenton on September 19, 1969 "to explain the specific details that brought about [the] 'Order'." 10/20/69 letter from J. Calise (BMC) to E. Segessen, WPCP (Enclosure 3). At that time Benjamin Moore believed that rinsing strainers (filters used to capture naturally solidified latex particles) used in making pure latex vehicle¹ in an outside area of the plant allowed the rinse water to run into Benjamin Moore's flood control system and then be discharged into the River. BMC's solution to this problem was to collect and pump this rinse water "into the same storage area where all of the present latex wash² from the paint plant [was] collected." (Enclosure 4). As noted in an 11/20/69 Calise to Segessen letter, Benjamin Moore considered the case closed but solicited input from the State. Apparently from the record of correspondence, at Enclosure 4 and 5, the State never responded.

In February 1973, after Benjamin Moore sought to clarify the status of the 1969 order (Enclosure 5), the State again tested some effluent discharged from Benjamin Moore's storm water system. This test resulted in similar problems with color, turbidity, etc. At that time, BMC initially thought that the problem was caused by infiltration of river water into the sump, but Benjamin Moore decided to check the "entire underground drainage system which feeds the drainage sump." 3/26/73 Malkin (BMC) letter to Mr. Hamilton (N.J.D.E.P.) (Enclosure 6). This system review revealed

¹ "Vehicle" is a term of art in the paint industry that identifies fully polymerized latex in a suspension that becomes the film forming agent which binds pigments and other coating components.

² "Latex wash" meant the water collected when latex paint equipment was cleaned; it is also called "wash water." See Supplement to SR Question 8.

ABK000367

that, contrary to Benjamin Moore's belief that all drains in the facility were hooked up to the sanitary sewer, three drains in the vehicle plant were in fact discharging to the storm sewer system: the portable kettle cooling operation, a reactor cooling system and a sink drain in building #11, all in the vehicle plant where pure latex was made. Once this was discovered, these drains were connected to the sanitary sewer system. (Enclosure 7).

Although there was a "release" of water that allegedly caused problems with turbidity, etc., there is no evidence that this release contained hazardous materials. Neither turbidity nor color is related to the presence or discharge of hazardous materials. The water discharged from cooling the portable kettles would not have come in contact with any product material, so it could not pick up any hazardous materials if any were present. The scrubber used in the reactor system operated only when the manhole in the reactor was opened to add certain solid ingredients and would have picked up airborne particles released only during the addition of these ingredients into the reactor when the reactor manhole was open. Monomer was added only after the manhole was closed. However, the ingredients added to the reactor and the particles captured by this system do not contain chemicals similar to the list in 104(e) question No. 3 as can be seen in examining the air permit for the scrubber at Enclosure 8. The sink was used to wash hands.

SR Question 2. The meaning of "received and utilized in prior years" in reference to certain chemicals identified in 104(e) question No. 3, Mercury, Lead, Methyl Ethyl Keytone, Benzene/Ethyl Benzene.

In 1968, Benjamin Moore stopped using raw materials that contained mercury compounds in the manufacture of paint; mercury compounds were a common component of biocides - used to prevent mildew in water (latex) based paints. BMC's elimination of mercury from its paint is verified by a June 1972 Consumer Reports article that tested exterior latex paints and commended Benjamin Moore for eliminating mercury from its paints although mercury was used by other paint manufacturers at the time of the article. (Enclosure 9). At about the same time it eliminated mercury compounds in its latex paints, Benjamin Moore also began eliminating the use of lead compounds. While these chemicals were once used in Benjamin Moore's paint manufacturing processes, there is no record of a release of these materials to the Passaic River.

Benjamin Moore did not use benzene as a raw material in its products and, as far as it can determine, never used a raw material that contained benzene. Prior to 1986, ethylbenzene was used as a

- that survive although no record of such a file exists.
- c. On January 20, 1988, a NJ DEP inspector cited Benjamin Moore for an "NaOH overflow from cylinder cleaning operations" within the Plant. (Enclosure 15) This was not a discharge to the River and required only remedial action to prevent any further spills.
 - d. At this time, there are no other actions or proceedings that Benjamin Moore is aware of.

FR Question 12. Benjamin Moore's original response offered to make the numerous hazardous waste manifests available for review if EPA so desires. See FR Question 5(b) above. To the extent that EPA seeks information on the "purchase, use... hauling... of all hazardous substances", this same offer applies. Benjamin Moore purchased and purchases solvents (and all its materials) in bulk, which are shipped by common carrier, stored and inventoried at the Plant. The documents reflecting these many transactions, whose relevance to the Passaic River Study is questionable, represent a considerable volume as well as expense to copy. Additionally, given the time period for which this information is sought, obviously many such documents are not available due to age, destruction, etc. Benjamin Moore would be glad to allow review of these documents or provide whatever documents are required provided the requirement(s) is more narrowly defined.

FR Question 13. "Results of any analysis of groundwater, surface water, and any other environmental media performed at the facility."

Responding to a false report that Benjamin Moore was operating a "waste lagoon," see 11/25/95 response to SR Question 13, the State inspected the Plant on 11/26/84. As the record shows, Enclosure 16, no waste lagoon was found. A subsequent visit on 12/19/84 investigated a suspected discharge from the plant in the area of the storm water retention ponds. The State performed soil and surface water analysis but, these are questionable since the holding time was exceeded. (Enclosure 17). Nonetheless, no dioxins, PCBs, or mercury were found.

Results of media testing supporting various Benjamin Moore submissions for permits are attached at Enclosure 18.

FR Question 16.
Arthur A. Schulcz, Sr., Esq.
The Harker Firm
5301 Wisconsin Avenue, NW
Suite 740
Washington, DC 20015
Counsel for Benjamin Moore & Co.

assisted in review of responses, records, and preparation of this supplement.

Enclosure 17

Report on 12/19/84 Inspection

ABK000457

Form DWR-052
12/80NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
REPORT OF PHONE CALL OR VISITBureau or Office Metro-EnforcementIn _____ Out with T. McKeeDate 12/19/84 Time 9:30 AM

File _____

Routing T. HarringtonPerson Contacted Larry Lehnert, PEAffiliation Benjamin Moore & Co, 134 Lister Ave, Newark, NJ.

Phone No. _____

Subject of Call
VisitComplaint - illegal discharge into Passaic R.Summary of Call
Visit

Met. with Larry Lehnert, PE and Carl Mencher,
Plant Manager to inform them of the suspected discharge
violation. Mr. Lehnert supplied us with drawing of
plant drainage system and SPC Plan for
basin held only storm water runoff pumped from
plant. ^{10:30} Broken wall on north west corner of
basin - discharging directly into Passaic River.
Sampled soil and water in retention basin
for V.O.s & Metals - discharge water for COD, Petroleum
Hydrocarbons & chloride.

Mr. Mencher stated that B. Moore & Co. president
wants basin closed & covered for extra parking.

tion Recommended Send letter with instructions to seal
S.W. discharge & apply for GW discharge permit
& close lagoon. Waiting for sample results

ABK000458

Timothy Fields / ATTACHMENT V

orm DWR-052
2/80NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
REPORT OF PHONE CALL OR VISITBureau or Office Metro-EnforcementIn _____ Out ✓Date 12/19/84 Time 10:00 AMFile 84-Routing T. HarringtonPerson Contacted Harry Lehner, P.E.Phone No. 344-1200Affiliation Benjamin Moore & Co., 134 Lister Avenue, NewarkSubject of Call Discharge to Surface Water without Permit
Visit

Summary of Call Tom McKee & I met with Harry Lehner and
Visit Carl Mincher, Plant Manager of B. Moore & Co. to
investigate an anonymous complaint of an illegal
discharge from an on-site lagoon. The Southwest
section of the dike had collapsed and a continuous
discharge flowed into the Passaic River. The plant
representatives informed us that the discharge was
storm water runoff from the plant. We sampled
for Soil & Water V.O.s, Soil & Water Metals, COD, and
Petroleum Hydrocarbons.

Mr. Lehner said he would have the dike re-
paired as soon as possible.

Action Recommended When the results from the samples are in,
we will determine whether or not further actions
in groundwater should be taken.
contamination

ABK000459

Timothy T. Harrington Vn

METRO ENFORCEMENT

ID:201-669-3907

APR 06'93

15:03 No.006 P.17

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL LABORATORIES
QUANTITATIVE RESULTS & QUALITY ASSURANCE DATA

LAB CONTROL #: 4363 SAMPLE TYPE: SP FIELD SAMPLE #: BD0742
REPORT DATE: 1/7/85 SECTION SUPERVISOR: [Signature] LAB SUPERVISOR: [Signature]
DUPLICATE LC#: 4363 MATRIX SPIKE LC#: 4363

	RESULTS			QUALITY CONTROL DATA				
	SAMPLE DATA			LAB. DUPLICATE		MATRIX SPIKE		
RCRA Testing ¹	Sample Concn. mg/L	MDL ² mg/L	Method Blank ug/ml	First mg/l	Second mg/l	% Diff.	Concn. Added mg/l	% Recov
Parameter								
ARSENIC	ND	0.001	<0.001	0.006		20	1.0	92
BARIUM	0.59	0.05	<0.05	0.13		3.7	1.0	91
CADMIUM	0.03	0.01	<0.01	7.1		0.7	1.0	80
CHROMIUM	ND	0.05	<0.05	ND		NA	1.0	83
LEAD	0.45	0.05	<0.05	1.62		6.0	1.0	81
MERCURY	ND	0.001	<0.001	ND		NA	1.0	93
SELENIUM	0.008	0.001	<0.001	0.023		9.5	1.0	87
SILVER	ND	0.01	<0.01	ND		NA	1.0	84
pH								
CORROSIVITY (mmpy)								
IGNITIBILITY °C								
REACTION W/WATER								
TOTAL CYANIDE								
TOTAL SULFIDE								

METHOD REFERENCES:

¹ Test Methods for Evaluating Solid Waste, SW-846, Second Edition, July, 1982.

² BEL Established Method Detection Limits.

*If data is qualified, see comments below:

ND - None Detected

ATTACHMENT

Enclosure 18

Media tests for permits

ABK000476

Garden State Laboratories, Inc.

Bacteriological and Chemical Testing

410 Hillside Avenue
Hillside, New Jersey 07205

Mathew Klein, M.S., Director Emeritus
Harvey Klein, M.S., Laboratory Director

Toll Free 800-273-8901
Telephone 508-628-8900
Fax 508-628-8936

REPORT OF ANALYSIS

TO: BENJAMIN MOORE & COMPANY
134 LISTER AVENUE

REPORT # 951117001.2

CLIENT # BEN02

DATE SUBMITTED: 11/17/95

NEWARK

NJ 07105

ATT: CHARLES ILSLEY

SAMPLE TYPE: WATER

SAMPLE ID: 24 HR. COMPOSITE SEWAGE (PVSC)

SAMPLE LOCATION: @OUTLET #1 CONTROL LAB

DATE SAMPLED: 11/17/95

TIME SAMPLED: 10:45AM

[illegible]

ss than, not detected.

ABK000487

Garden State Laboratories, Inc.

Bacteriological and Chemical Testing

410 Hillside Avenue
Hillside, New Jersey 07205

Mathew Klein, M.S., Director Emeritus
Harvey Klein, M.S., Laboratory Director

Toll Free 800-273-2901
Telephone 908-688-8900
Fax 908-688-8966

REPORT OF
ANALYSIS

TO: BENJAMIN MOORE & COMPANY
134 LISTER AVENUE

REPORT # 951117003.2

CLIENT # BEN02

DATE SUBMITTED: 11/17/95

NEWARK
ATT: CHARLES ILSLEY

NJ 07105

SAMPLE TYPE: WATER
SAMPLE ID: 24 HR. COMPOSITE SEWAGE (PVSC)
SAMPLE LOCATION: @OUTLET #2 CENTRAL LAB

DATE SAMPLED: 11/17/95

TIME SAMPLED: 10:15AM

[illegible]

ss than, not detected.

ABK000484

SECTION E

ANALYSIS OF INDUSTRIAL WASTE

26. Analysis for Industrial Waste must be a proper sample taken for each outlet.

OUTLET NO. 20403111

Report to the nearest unit: XX
except where indicated with (1)
Example: 15 mg/l

Report to the nearest hundredth: 0.XX
except where indicated
Example: 0.36 mg/l

Code	Parameter	Value	Code	Parameter	Value
0200*	Radioactivity (PL-1)		1097*	Antimony (Sb)	
0500	Total Solids		1002	Arsenic (As)	
0510	Total Mineral Solids		1022*	Boron (B)	
0530	Total Suspended Solids		1027	Cadmium (Cd)	
0552	Mineral Suspended Solids		1034	Chromium Total (Cr)	
0555 (1X3)	Petroleum Hydrocarbons		1042	Copper (Cu)	
0310	Biochemical Oxygen Demand (BOD)		1045*	Iron (Fe)	
0340	Chemical Oxygen Demand (COD)		1051	Lead (Pb)	
0680	Total Organic Carbon (TOC)		0720*(3)	Cyanide (CN)	
9000	pH (standard unit range)		1900	Mercury(Report to 0.XXX)	
0610 (1)	Ammonia as N		1067	Nickel (Ni)	
0550 (1X3)	Total Oil & Grease		1147*	Selenium (Se)	
0745* (1)	Sulfide		1077*	Silver (Ag)	
0507* (1)	Ortho Phosphates as P		1102*	Tin (Sn)	
0625* (1)	Kjeldahl N as N		1092	Zinc (Zn)	
9998* (2X3)	TTO (Report to 0.XXX)		2730	Phenol	
			4053*	Pesticides (Report to 0.XXX)	
			9999*(3)	TTVO(Report to 0.XXX)	

FOOTNOTES:

(1) Report results to the nearest tenth, i.e., 1.6 mg/L

(*) Analyze for this if reasonably expected to be present in the discharge unless otherwise exempted.

(2) See Instructions.

(3) Grab sample required.

REVISED 1/87
REVISED 8/89
REVISED 7/90
REVISED 9/94

ABK000493